EXPLORING THE POTENTIAL OF EARLY IDENTIFICATION AND INTERVENTION WITHIN A COLLEGE OF APPLIED ARTS & TECHNOLOGY

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Submitted in partial fulfillment of

the requirements for the degree of

Master of Education

Faculty of Education

Brock University

St. Catharines, Ontario

June 1992

Abstract

This study probed for an answer to the question, "How do you identify as early as possible those students who are at risk of failing or dropping out of college so that intervention can take place?" by field testing two diagnostic instruments with a group of first semester Seneca College Computer Studies students.

In some respects, the research approach was such as might be taken in a pilot study. Because of the complexity of the issue, this study did not attempt to go beyond discovery, understanding and description. Although some inferences may be drawn from the results of the study, no attempt was made to establish any causal relationship between or among the factors or variables represented here. Both quantitative and qualitative data were gathered during four research phases: background, early identification, intervention, and evaluation.

To gain a better understanding of the problem of student attrition within the School of Computer Studies at Seneca College, several methods were used, including retrospective analysis of enrollment statistics, faculty and student interviews and questionnaires, and tracking of the sample population. The significance of the problem was confirmed by the results of this study. The findings further confirmed the importance of the role of faculty in student retention and support the need to improve the

quality of teacher/student interaction. As well, the need for skills assessment followed by supportive counselling and placement was supported by the findings from this study. Strategies for reducing student attrition were identified by faculty and students.

As part of this study, a project referred to as "A Student Alert Project" (ASAP) was undertaken at the School of Computer Studies at Seneca College. Two commercial diagnostic instruments, the Noel/Levitz College Student Inventory (CSI) and the Learning and Study Strategies Inventory (LASSI), provided quantitative data which were subsequently analyzed in Phase 4 in order to assess their usefulness as early identification tools. The findings show some support for using these instruments in a two-stage approach to early identification and intervention: the CSI as an early identification instrument and the LASSI as a counselling tool for those students who have been identified as being at risk.

The findings from the preliminary attempts at intervention confirmed the need for a structured student advisement program where faculty are selected, trained, and recognized for their advisor role. Based on the finding that very few students acted on the diagnostic results and recommendations, the need for institutional intervention by way of intrusive measures was confirmed.

Acknowledgements

I would like to acknowledge the support and inspiration provided to me by Dr. Michael Kompf and to thank him for his significant role and leadership in bringing the Brock M.Ed. program to Seneca. My renewed enthusiasm for a career in education is due in a large part to his guidance. My friends and colleagues from the first Seneca/Brock M.Ed. program are acknowledged and thanked for the wonderful experiences we all shared.

I would also like to acknowledge and thank the many Senecans who provided a variety of support: Dr. Anthony Tilly, Dean, Centre for Educational Effectiveness, for making resources available and for his encouragement and insights; David Coates, Director, Institutional Planning, for his hard work and patience in assisting me with the data analysis; Bill Howorth, Dean, and Judith Limkilde, Chair, Computer Studies; all faculty who participated in the study, and in particular Lynda Archer, Gerry Foley, John Legate, Janet Mawhinney, and Dennis O'Neill who provided the PSY 585 class time to conduct the study; and special thanks to the Computer Studies students for being willing participants.

On a personal note, I thank my mother who instilled in me the values necessary to achieve success. My children, Brian and Karen, have been a constant source of support and understanding during many years of part-time study. I also thank Dennis for his belief in me and for gently prodding at just the right times.

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CHAPTER ONE: INTRODUCTION

Introduction to the Problem

This is a study of the potential of early identification of students at risk of dropping out of college for intervention and retention purposes. The study was conducted during the 1991/92 academic year within the School of Computer Studies at Seneca College of Applied Arts & Technology[1]. The emphasis of this descriptive study was on diagnosis for prevention rather than prediction of student attrition. A related sub-problem examined in this study was the determination of factors contributing to current student attrition rates within the School of Computer Studies at Seneca College.

The main purpose of this research was to explore the question, "How do you identify as early as possible those students who are at risk of failing or dropping out of college so that intervention can take place?" by field

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[1]Seneca College, one of 23 Ontario Colleges of Applied Arts and Technology, serves a diverse and multi-cultural student population of approximately 11,000 full time and 80,000 part time, through an offering of more than 180 certificate and diploma programs, at seven main campuses and numerous satellite locations in North York and York Region, within the greater Metropolitan Toronto area. The School of Computer Studies serves a diverse full-time student population of approximately 850 students at the Don Mills Campus, which was designed specifically for Computer Studies.

testing two diagnostic instruments with a group of first semester college students.

Background of the Problem

Ontario's Colleges of Applied Arts & Technology (CAATs) play an important role in producing graduates with the right skills to facilitate the economic growth of Ontario. However, as the Premier's Council Report (1990), People and Skills in the New Global Economy, suggested, the high student dropout rate is one of the colleges' fundamental problems. The report further stated that "to alleviate this problem, new approaches must be implemented to combat dropout rates that are as high as 50 percent in the colleges" (p. 8). The tremendous waste of human potential, along with the high cost in terms of public funding, resulting from student attrition is a very real problem.

Although the problem of student attrition is not a new one, it has become more of a priority in recent years as colleges strive to become more student-centred. Also, from a fiscal perspective, high student attrition means a substantial reduction in government funding to the CAATs. As Astin (1975) pointed out, allocation of resources to improving student retention may be more cost effective than applying the same resources to recruitment activities designed to increase first-year enrollments. As many CAATs undertake to study the causes of student attrition and the possible remedies, a repository of research is being formed.

This study contributes significantly to the research being done in this area.

Important to any study of student attrition is the realization that the problem is a complex one. Not only is it difficult to describe it in a definitive way but it would be virtually impossible and unnecessary to correct all forms of attrition. However, given the apparent rate of 40% - 50% attrition in the CAATs, the potential for reducing that attrition rate does appear to be worth exploring.

Statement of the Problem

The problem in this study was to determine the usefulness of two diagnostic instruments for identifying first semester students at risk of failing or dropping out of college. As part of this problem, the factors contributing to current student attrition within the School of Computer Studies at Seneca were determined and described. It was also important to distinguish those factors over which Seneca might exert some influence.

Purpose of the Study

The purpose of this study was to determine whether or not first semester students at risk of failing or dropping out of college could be accurately identified early in the semester through the use of a diagnostic instrument. The usefulness of two specific diagnostic instruments were assessed in this regard.

A better understanding of the problem of student attrition at Seneca, as well as related intervention strategies, has been gained through this study. The study attempted to address the gap that exists between our knowledge of individual student needs and our subsequent ability to match them to appropriate campus resources.

Questions to be Answered

In order to assess the potential of early identification and intervention for increased student retention within the School of Computer Studies, the following questions were addressed:

1. What are the historical patterns of student attrition between first and second semester?
2. How may the factors contributing to student attrition be identified?
3. How may strategies to reduce student attrition be identified?
4. What is the process of first semester student attrition, including rate, timing, and causes?
5. How useful is a diagnostic instrument in identifying students at risk of dropping out in first semester?
6. Which intervention strategies might be the most effective in improving student retention in first semester?

Rationale

In some respects, this research may be considered as a pilot study which might now be looked at in broader terms to provide an interactive model of practice for addressing student attrition and retention. Given the significance of the problem of student attrition and the lack of related research within Seneca and other CAATs, the findings from this research make an important contribution towards understanding the problem and providing a practical model for addressing the problem. Much has been written on the theory of student attrition and retention but little has been written on retention models that bridge the gap between theory and practice. Although limited models exist, few applications which relate directly to educational theory and administrative practice exist. This research study helps to bridge this gap.

Theoretical Framework

Conducting this research within a theoretical framework was important for understanding the relationship of different variables to student attrition and retention. The review of earlier research provided the basis for a model of student attrition which describes the factors contributing to the attrition process. Tinto's (1975) institutional model of student retention based on a theory of academic and social integration of student and institution provided a framework for this research. An understanding of entry-

level student characteristics as well as institutional characteristics was important in assessing the potential of early identification for intervention. Tinto's conceptual schema for dropout from college showing processes of interaction between the student and the academic and social systems of the institution supports the idea that increased interaction through intervention can improve student retention.

Importance of the Study

This research significantly increases our knowledge of the attrition process within the School of Computer Studies at Seneca and demonstrates the usefulness of diagnostic instruments as early identification tools. As a pilot study, it provides a practical framework for further similar research elsewhere at Seneca and at other CAATs.

The importance of research in this area was evident from the recommendations of Vision 2000: Quality and Opportunity (1990) for a renewed college mandate that states "accessibility should include the opportunity to succeed, as well as the opportunity to enrol..." (p. 27).

This research was coordinated and supported with appropriate resources through the Centre for Educational Effectiveness at Seneca, with the expectation of a final report on the findings, conclusions and recommendations. The findings from this study support the recommendations contained in a recent report, Assessment, Advisement and

Placement: Report on Plans for 1992, prepared by the Centre for Educational Effectiveness at Seneca.

At a time when the expectation is that government, business, industry, and education are expected to do more with less, this study contributes to a model of student development that promotes increased retention rather than increased enrollment. The result is a better use of taxpayers' money since there will be fewer students repeating and restarting programs due to early identification and intervention.

Definition of Terms

The following definitions are given in order to develop a familiarity for the reader of the conceptual terms referred to in this research study.

academic integration - students' positive perception of program, active participation in attending classes and completing homework assignments, etc.

academic programs - college programs leading to a diploma or certificate.

articulation - a planned process to link secondary school and college curricula and to increase student awareness of college programs and expectations.

baseline data - a basic standard of value against which to measure or compare future data.

CAATs - Ontario Colleges of Applied Arts & Technology.

CSI - College Student Inventory.

Dropout Proneness - a scale used in the CSI to measure a student's overall inclination to drop out of school before finishing a degree.

dropouts - students who withdraw from an academic program prior to graduation.

early identification - identification within the first six weeks of Semester One of students at risk of failing or dropping out of college.

enrollment patterns - an analysis of the numbers of students who enrol and leave an institution, showing trends over a period of time.

entry-level - beginning point (e.g., semester 1).

faculty - professors as defined under the Collective Bargaining Agreement between the Council of Regents and

Ontario Public Service Employees Union (OPSEU).

GPA - cumulative grade point average of a student as recorded on an official college transcript.

goal commitment - a means of measuring the importance of one's aim or object in doing something.

institutional characteristics - a combination of qualities or features that distinguish one organization (e.g., a college) from another.

institutional commitment - a means of measuring the value one places on a specific organization (e.g., a college) and the importance of being part of that organization.

interventions - active measures to change the enrollment behaviour of an individual.

persisters - individuals who remain enrolled at an institution.

Receptivity to Institutional Help - a CSI scale used to measure how responsive a student is likely to be to intervention based on how

strongly the student expressed a desire for help in a variety of areas. The higher the score, the more receptive the student is expected to be.

remediation - correcting or removing the causes of attrition.

retention - the act of continuing to keep students enrolled in an institution.

retrospective - looking back at what has happened in the past with respect to attrition and retention.

Seneca - Seneca College of Applied Arts & Technology.

social integration - a matching of students' needs to be part of an organization with the human and physical resources of the organization.

student advisement program - a plan of what is to be done by individuals designated to advise students for the purpose of helping them to succeed.

student attrition - gradual process of loss of students from an academic program of study.

student-centred - action is taken on the basis of what is best for the student.

successful dropouts - described by Dietsche (1989) as those students who satisfied the academic requirements of their program but left the college in any case.

successful persisters - described by Dietsche (1989) as those students who achieved an overall average of 60% or greater and re-enrolled in the subsequent semester.

target groups - specific groups of students organized on the basis of similar characteristics.

underpreparedness - the condition of students not having a skill level that will enable them to be successful at the existing level of study to be undertaken.

unsuccessful dropouts - described by Dietsche (1989) as those students who obtained a grade average below 60% and also left the college.

unsuccessful persisters - described by Dietsche (1989) as those students who obtained a grade average below 60% but re-enrolled at the college in the subsequent semester.

withdrawals - students who withdraw from an academic program prior to graduation.

Scope and Delimitations of the Study

The purpose of this study was to determine whether or not first semester students at risk of failing or dropping out of college could be accurately identified early in the semester through the use of a diagnostic instrument. Two specific diagnostic instruments were field tested in this regard. The sample of students was tracked for purposes of describing the process of attrition and determining the usefulness of the diagnostic instruments. The diagnostic instruments were tested with a sample of Seneca Computer Studies first semester students. Since the full-time day program population at Seneca is approximately 10,000 students, it was not practical to study the entire full-time college population. Although the findings of this research will be of interest to areas of Seneca other than Computer Studies and to other CAATs, no attempt was made to generalize the results to other areas. Because of lack of

resources, intervention strategies were implemented on a preliminary basis only.

Because of the complexity of the issue of student attrition, this study does not go beyond discovery, understanding and description. No attempt was made to establish any causal relationship between or among the variables under consideration and student dropout behaviour.

Outline of the Remainder of the Thesis

Chapter Two acquaints the reader with existing studies relative to what has been found in the area of student attrition and retention in terms of methods, analyses, findings, and implications. The importance of this study is evident from the literature review reported in this chapter. It draws from various theoretical positions in order to provide a conceptual framework to help interpret the findings from this study. In order to support this descriptive study, emphasis was given to practical rather than theoretical models of early identification and intervention for student retention.

Chapter Three describes the research methodology, including details about the research design, pilot studies, selection of subjects, the instruments used, and the procedures followed. As well, the methods of data collection, recording and analysis are described.

Chapter Four presents the findings in table and graph form. Interpretation of the findings is discussed in relation to the questions posed by this research.

Chapter Five summarizes the results, describes the conclusions in relation to the questions posed and the literature review, and makes recommendations for further research. Implications for theory and practice are considered.

CHAPTER TWO: REVIEW OF LITERATURE

Overview

This review of literature will acquaint the reader with previous research done in the area of student retention as it relates to methods, analyses, findings, and implications. In addition, the literature review supports the need for this research and provides the theoretical base to help interpret the findings. In order to address the complex problem of student attrition, it was important to develop an understanding of the attrition process, the characteristics of persisters and dropouts, as well as institutional characteristics. This chapter also reviews the literature pertaining to specific diagnostic instruments for purposes of early identification of students at risk and provides practical information about the most effective intervention strategies.

The student attrition/retention literature will be treated in three categories: theoretical discussions of attrition/retention factors; empirical studies which test certain hypotheses about attrition/retention; and strategies or applications for reducing student attrition. The focus of the theoretical approach is on understanding and prediction while the focus of the practical approach is on action. The review of related literature has been organized under four main areas as follows:

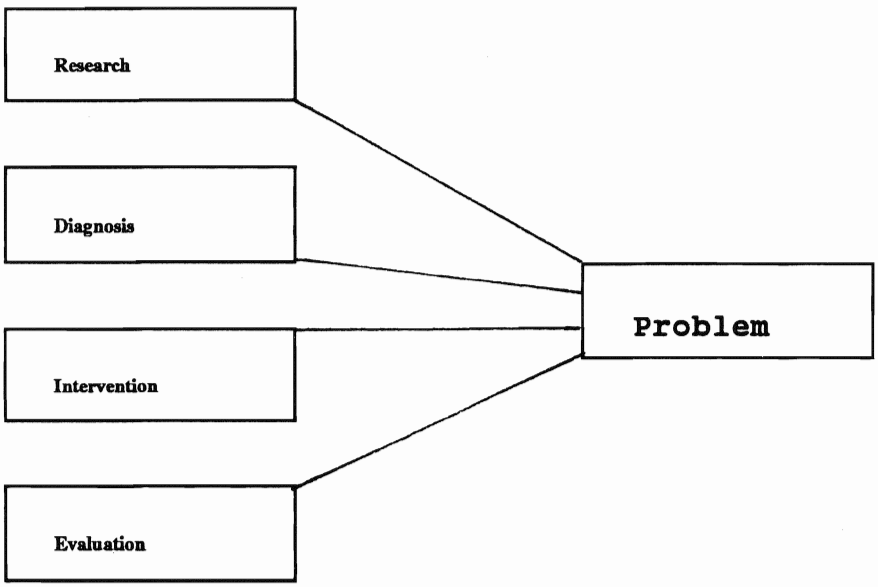

Figure 1. Four main areas of literature review.

A summary of the main areas is provided at the end of the chapter.

Student Attrition/Retention: Background

The historical and background information for this study has been organized according to the four main areas identified above and includes the three categories of literature previously mentioned.

Research

Innumerable studies have examined the complex topic of student attrition. A review of related research completed by notables such as Spady (1970), Bean (1973; 1980; 1982; 1983), Astin (1975), Cope and Hannah (1975), Tinto (1975; 1986), Pantages and Creedon (1978), and Pascarella and Terenzini (1980) provided an excellent framework for this study.[2] It appeared from several syntheses of student retention literature that prior to 1970 attrition studies failed to provide a conceptual theoretical basis and focused only on describing the relationship of student and institutional characteristics to the problem of dropout. For the purposes of this research, it was important to first consider a theory of student attrition which describes the attrition process, explains why students drop out of college, and which can be used to help diagnose which

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[2]See Miller (1986) for a more comprehensive treatment of this topic.

students are most at risk of dropping out. Tinto (1975) acknowledged that "research on dropout from higher education has been marked by inadequate conceptualization of the dropout process" (p. 90). Early research often provided definitions of student attrition that were varied and ambiguous. The failure to distinguish between the different types of dropout (e.g., dropout due to academic failure, voluntary withdrawal, transfer to another program or institution, or temporary withdrawal) often resulted in contradictory findings.

Spady (1970) was one of the first to recognize that "although no one theoretical model can hope to account for most (let alone all) of the variance of dropout rates within or across institutions" (p. 64), any attempts to address the problem of student dropout must first conceptualize a definite theoretical basis. Spady's work is important to the study of student retention because of the importance he placed on the student's social integration within the institution.

The conceptual and predictive models of Vincent Tinto and John Bean were of particular importance to this research study. These two models support the approach of this research in assessing student attitudes, intentions, commitments, and interactions with the institution. Tinto (1975) further developed the empirical model proposed by Spady by adding expectational and motivational attributes of

individuals in order to illustrate the "longitudinal process of interactions between the individual and the academic and social systems of the college" (pp. 93-94). Of specific relevance to this study were Tinto's concepts of student commitment, both to an educational goal and to a particular institution. He proposed that a student enters the institution with certain levels of commitment, and then, based on the student's academic and social interaction within the college, these commitments are strengthened or weakened. Tinto found that "in the final analysis, it is the interplay between the individual's commitment to the goal of college completion and his commitment to the institution that determines whether or not the individual decides to drop out from college and the forms of dropout behaviour the individual adopts" (p. 96). Figure 2 provides a conceptual schema of the Tinto model which has served as the basis for the vast majority of subsequent research on the topic of student attrition/retention.

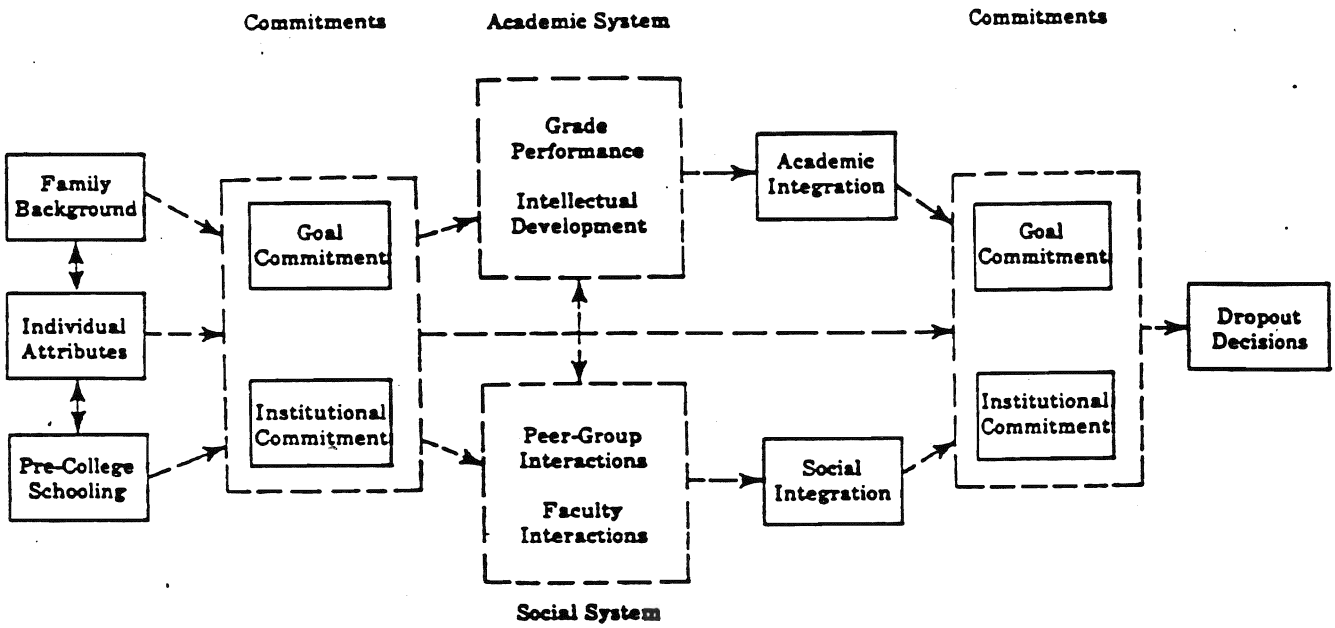


Figure 2. A conceptual schema for dropout from college (Tinto 1975: p. 95).

The validity of Tinto's model was tested by Pascarella and Terenzini (1983) in a study which considered the importance of specific variables to student persistence. Their findings confirmed Tinto's concept of student-environment fit and the fact that what happens to students while they are at college may have a greater impact on persistence than either the background characteristics or the goal and institutional commitments with which students enter college.

Bean's (1983) model of attrition, based on a synthesis of the research literature, holistically considered four sets of variables - background, organizational, environmental, and attitudinal/outcome variables. He proposed that all variables have a direct or indirect effect on a student's intent to stay or leave the institution. In his model, intent to leave was hypothesized to be the best predictor of dropout, and the attitudinal variables to be the best predictors of intent to leave.

A research study conducted by Bers and Smith (1991) examined the extent to which social and academic integration and student educational objectives and intents to reenroll are predictive of persistence for community college students. The social and academic integration scales developed earlier by Pascarella and Terenzini (1983) were in large part replicated with a population of two-year college students. Their findings indicated that student educational objectives and intents, followed by academic and social

integration, contributed most significantly to differentiating persisters and nonpersisters. This study was important because it not only supports the Tinto and Bean models but extends what is known about the influence of academic and social integration and students' goals and intentions to a two-year institution.

The longitudinal study completed by Peter Dietsche (1989) at Humber College, Rexdale, Ontario, was important because of the similarities between Seneca and Humber Colleges in terms of student population, institutional characteristics, geographic location, size, etc. Data for the Dietsche study were gathered through a freshman questionnaire and a student satisfaction survey administered at Humber College in the Fall of 1986. Dietsche integrated the theories of Bean and Tinto and examined differences in the types of students who drop out and the differences in the processes leading to withdrawal. Tinto's theory that the degree of academic and social integration correlates with student persistence or withdrawal was supported by Dietsche's finding that "academic integration was the most important variable in determining persistence" (p. 187). Interaction and outcome variables (i.e., interaction between student and institution) accounted for three times the amount of variance in dropout as did the background and entry level variables. In measuring intent to leave, the

most important factor was the level of commitment to program completion, followed by vocational certainty.

Having considered theoretical models of student attrition, the reader's attention is now directed to the literature related to the process of attrition, including rate of attrition, timing, and causes. Our limited knowledge and understanding of the process of student attrition notwithstanding the extensive research in this area was attributed by Hoyt (1978) to the large number of relevant variables, their complexity, and their interdependence. For example, graduation is most often used as a measure for retention purposes; however, it is difficult to account for "stopouts" (i.e., those who drop out but return to the same or a different institution at some subsequent time).

Studies show that there has been a fairly consistent pattern of student dropout from post-secondary institutions of approximately 50 per cent. It is important to note that studies conducted in the United States indicated that the rate of attrition varies with the type of institution (i.e., public, private, two-year, four-year). Astin (1975) confirmed a dropout rate of 50% in two-year community colleges. Pantages and Creedon (1978) noted that for every ten students who enrol in a four-year college program only four will graduate on schedule; one will graduate sometime later, and five will drop out altogether. The findings from

the What Works in Student Retention survey reported by Beal and Noel (1980) showed that four-year private nonsectarian institutions had the highest retention rates and two-year public institutions had the lowest rate. In three years, on average, only 42% of the students in the two-year public institutions had graduated. In discussing the patterns of departure among first-time entrants, Tinto (1985) suggested that 40% to 45% of first-time entrants leave without earning a degree.

A study by Stoll and Scarff (1983) of Ontario's CAATs indicated attrition rates of 35% to 40% for students entering two- and three-year programs. The Premier's Council Report (1990), People and Skills in the New Global Economy, stated that "new approaches must be implemented to combat dropout rates that are as high as 50 percent in the colleges" (p. 8). As noted in the report to the Minister of Colleges and Universities, Vision 2000: Quality and Opportunity (1990), "the attrition rate from college post-secondary programs - on average, more than 40 per cent - is similar to that of other jurisdictions, but it demonstrates that Ontario colleges have room for improvement" (p. 86).

Through his study of 2,749 first-year students at Humber College, Dietsche (1989) found that after one year, 30.4% of the sample had dropped out; about one-half of the dropouts left during or at the end of first semester and about one-half during or at the end of second semester. Of

those who dropped out, 32.5% were successful dropouts and 55.6% were unsuccessful dropouts (11.9% were unclassified). Dietsche found that the processes leading to withdrawal were different for each of the two groups (i.e., for the successful dropouts, negative perceptions of program and institution were significant; for unsuccessful dropouts, academic failure was most significant).

A recent report, Persistence in Attendance by Students, (1991) prepared by David Coates, Director of Institutional Research at Seneca College, analyzed student flows into and through college programs from 1987 to 1990 based on Seneca College student records submitted to the Ontario College Information System (OCIS). This report indicated an attrition rate of 38.6% for the 1987 cohort of students over the three-year period. This analysis took into account those students who dropped out but re-entered the college within the three-year period. As noted in this report, the data analysis could be more accurate and reliable if the actual Seneca student records had been used rather than the OCIS data. However, it appeared that the rate of student attrition at Seneca College was in excess of one-third of the intake of students. The literature supported the need for research related to student retention which will result in the development of strategies to reduce the current high rate of attrition at Seneca.

Tinto (1986) proposed that retention efforts must begin early to identify and address student needs and must consider the different stages of student leaving. He suggested that the critical periods occur prior to entry, during the period of application and preentry orientation programs, in the first semester of college when students are least integrated, as well as the remaining years of college. Noel (1976; 1985) suggested that the first six weeks are the most critical in determining whether a student stays or leaves.

In examining the Coates (1991) report, it appeared that the rate of attrition at the end of first year was 32.5%, while the rate at the end of the second and third years was 9.7% and .6% respectively. Both the Coates' report and the Dietsche study indicated that the highest rate of attrition occurred in the first year. The literature supported the focus of this research in considering the potential for intervention in the first year of enrollment.

Noel, Levitz, and Saluri (1985) identified six major themes of attrition: academic boredom and uncertainty, transition/adjustment difficulties, limited or unrealistic expectations of college, academic underpreparedness, incompatibility, and irrelevancy. These themes were important to this research study in determining the best methods of identifying students at risk.

The four basic categories of reasons for student dropout were reported by Pantages and Creedon (1978) as

academic matters (including deficient grades, dissatisfaction with quality of curricula and instruction, course schedule, etc.), financial difficulties, motivational problems and personal considerations, and dissatisfaction with college.

In reporting the results of a longitudinal study, Astin (1975) identified three groups of students as persisters, stopouts, and dropouts. A followup survey of student dropouts revealed the most frequent reasons for dropping out for both men and women to be boredom with courses, financial difficulties, dissatisfaction with requirements or regulations, and change in career goals. Poor grades was reported as fourth most important in dropout by men and seventh for women.

The findings of Mallette and Cabrera (1991) provided support for Tinto's proposition of differentiating between the different types of voluntary withdrawal behaviour. Of statistical significance in their dropout vs. persister model were faculty concern for students, academic performance, final institutional commitment and finance attitudes. Final institutional commitment and final goal commitment were the only variables of statistical significance in differentiating between persisters and transfers.

Lenning, Beal, and Sauer (1980) defined four main student types as persister, stop-out, attainer (one who drops out prior to graduation but after attaining a certain

goal), and drop-out. Student characteristics were discussed in relation to academic factors, demographic factors, aspirations and motivation, and financial factors. Institutional characteristics were categorized on the basis of objective environment (including image, cost, size, services, etc.), student involvement, and administrative policies and procedures. These characteristics were further discussed in terms of the interactions or "fit" that occurred between students and the institution and external forces and variables (such as economic cycles and social forces).

Dietsche (1989) identified four student types as successful persister, unsuccessful persister, successful dropout, and unsuccessful dropout. Academic integration (i.e., students' involvement in and perception of their academic program) was the single most important persistence factor in the four categories. Dietsche found that the critical variables in explaining withdrawal were academic integration, lack of confidence in ability to succeed, intent to leave the college, and change in educational commitment. When considering only dropout vs. persistence, he found previous academic experience to be less important than the attitudinal and behavioral characteristics of students in their first semester. These findings supported the focus on the affective domain for purposes of this study.

Factors in student retention were identified by Beal and Noel (1980) from survey responses received from 387 institutions, representing a sample of two- and four-year public, private, and religious institutions. These factors were described in What Works in Student Retention and were differentiated by type of institution. For purposes of this research study, it was important to note their findings that "caring attitude of faculty and staff was considered most important by all four types of institutions. High-quality teaching was a strong second for most types of schools, followed by adequate financial aid" (p. 19). The two most important dropout-prone characteristics were found to be low academic achievement and limited educational aspirations. Conflict between class participation and job was a more significant factor for two-year public institutions than for other types of institutions. This finding was supported by the Dietsche (1989) findings which saw the unsuccessful dropouts and unsuccessful persisters more likely to be working than the successful persisters and successful dropouts. Of further interest to this study was the Badger (1991) finding that the majority of students at Seneca appeared to hold a job while attending college. She found 76.1% of the graduates surveyed had worked while attending Seneca, 38% working 10-19 hours per week and 18.8% working 20-29 hours per week. This finding appeared to indicate

that students can work a significant number of hours and still graduate.

A study conducted by Koodoo, Rampaul, and Didyk (1984) to determine the reasons for withdrawal and/or non-graduation from a community college found that school-related ones (i.e., lack of interest in school, test failure, boredom with courses) were given most frequently. Although the report prepared by George Radwanski (1987) considered the causes of dropping out for high school students, it had relevance to this study of college students since most students entering the Ontario CAATs have experienced the Ontario high school system. The Decima research and Goldfarb research carried out for the study found that school-related reasons were the most significant factor in high school dropout as reported by student dropouts, teachers, and parents of dropouts. Similar to the findings of Noel, Levitz and Saluri (1985), "among the school-related reasons given by dropouts, the ones most frequently mentioned were general dislike, lack of interest, and boredom. Difficulty with particular subjects or with overall course material was ranked far lower as a contributing factor" (p. 88). Again, these findings supported the focus for this study on the motivational and attitudinal aspects of attrition and retention.

Financial need and availability of financial aid have more to do with access and choice than with persistence according to the findings of Cope and Hannah (1975).

In discussing Students with Uncertain Academic Goals as a target group for retention, Gordon (1985) suggested that the basic causes of indecision include lack of personal, academic, and career information; lack of developmental skills such as decision-making; and personal and social problems. In an unpublished paper titled Mohawk College Withdrawal Report, (February 1991), reasons given for withdrawal by Fall 1990 first semester college student dropouts indicated that lack of career focus/direction was the most significant, with academic reasons being the second most significant.

It was clear from the literature that faculty play an important role in student satisfaction and expectations. In the student satisfaction research reported by Badger (1991), student perceptions of faculty lack of concern for teaching and student development was a recurring theme. Written comments given by a majority of student respondents strongly suggested concern for a lack of teacher training within the institution. "Recommended improvements were heavily weighted in the areas of faculty training and curriculum revision, although it seemed clear from the comments that the students were not questioning their teachers' grasp of content...clearly the findings of this study would indicate

that it (lack of teacher training) is a serious shortfall in the eyes of the students" (Badger, 1991, pp. 120 and 121).

In looking at the "right" questions to ask when doing research, Levitz (1990) emphasized that "dropping out is a multifaceted process, which affects different students at different times" (p. 4). Because of this complexity and the importance placed on the first six weeks of a student's experience at college, she recommended that research should be longitudinal with an emphasis on the early stages of the student-institution experience.

As Dietsche (1989) pointed out, the most important variables related to persistence and withdrawal may differ extensively from one institution to another. He suggested that only when a profile has been studied and understood is it possible for a college to successfully implement strategies that can truly address the individual needs of its students. Of importance to this study was the obvious need for Seneca to undertake its own institutional research in order to develop a profile of its own students.

Diagnosis

In looking at The Other Side of Assessment, Hirsch (1987) reported that:

> It is ultimately, more than anything else, the capability of our colleges to meet each person on his or her terms, to assess his or her individual educational needs, career and life goals, and

> objectives and to be in a position to provide programs of education that are appropriate and relevant to those needs, goals, and objectives. (p. 23)

He highlighted the recommendation contained in the report of the Study Group on the Conditions of Excellence in American Higher Education (1984) that early assessment programs be developed to identify the needs of high-risk students so that colleges can provide the help they need to stay in school and be successful. Hirsch discouraged the use of a single standardized test or standardized tests only for assessment purposes and suggested that assessment at least include aptitude, career, skills, and self-concept instruments and techniques. In the League of Innovation document, Computerized Adaptive Testing: The State of the Art in Assessment at Three Community Colleges (1988), it was suggested that "the ideal diagnostic test would incorporate a theory of knowledge and a theory of instruction. The theory of knowledge would identify the student's skills and the theory of instruction would suggest remedies for the student's weaknesses" (p. 5).

It was clear from the literature that an important part of an intervention model of student retention is the identification of student needs so that institutional planning can be directed to provide appropriate resources to enhance student success. As well, a method of early

diagnosis of individual student needs is important if the institution is to take an intervention approach to matching students with the appropriate resources.

The following literature review related to the two diagnostic instruments selected for this study supports their use:

Noel/Levitz College Student Inventory (CSI)

The CSI instrument consisted of 194 items on 19 scales and was described by Schreiner (1991) as "a needs assessment tool, a method of assessing students' predispositions, pre-college experiences, and self-reported needs...an indicator of students who are at risk for academic and personal difficulties which may subsequently affect their decision to stay at a particular institution" (p. 20). For purposes of establishing the reliability and validity of the CSI for this research study, the abstract from an unpublished report, The College Student Inventory: An Assessment of Risk Level in College Students, (Schreiner 1991) is cited as follows:

> The psychometric properties of the College Student Inventory (Stratil, 1988) were examined using as subjects 4,915 college students from 46 United States colleges and universities. Several methods were utilized to determine if the CSI is a reliable and valid measure of students' ability to succeed and persist in college. Reliability

> estimates averaged .80 via coefficient alpha. Factor analysis confirmed that the 194 items loaded on factors which basically corresponded to their designated scales. Discriminant analyses indicated that the CSI is able to significantly discriminate between dropouts and persisters and by GPA ($p<.001$). Regression analyses indicated that five of the scales were most predictive of first-year GPA (multiple $r=.48$). The MANOVA also found significant differences between dropouts and persisters ($p<.001$). The CSI therefore appears to be a promising tool for measuring a student's ability to succeed and persist in college. (p. 1)

The findings from this validity study also provided meaningful data against which to consider the results of this research study. In addition to providing evidence of construct validity and criterion-based validity of the CSI, Schreiner described the characteristics of "at-risk" students and identified those CSI scales which were the most effective discriminants.

There is a need for replication studies and the reader is cautioned when interpreting the findings of this unpublished study. Notwithstanding the lack of published reliability and validity studies for the CSI, because the primary focus of this descriptive study was diagnosis rather

than prediction, the CSI was considered to be appropriate for purposes of the study.

Learning and Study Strategies Inventory (LASSI)

As described on page 2 of the LASSI User's Manual, it is an assessment tool designed to measure students' use of learning and study strategies and methods. It was developed as a diagnostic and prescriptive measure of both affective and cognitive processes on the assumption that students' motivation and use of learning strategies can be altered through educational interventions. Pintrich and Johnson (1990) identified two major problems for college students as lack of knowledge about appropriate learning strategies and lack of motivation to use them. They recommended use of the LASSI in a diagnostic manner to identify areas of motivation or learning strategies that need improvement.

In the promotional piece, The LASSI in Action, the publishers stated that "Nine years of research, development, and testing led to the creation of this statistically valid and reliable tool for the diagnosis of study skills" (p. 3). On page 5 of the LASSI User's Manual, the authors state that a study of test-retest reliability resulted in a correlation of .88 for the total instrument. Mealey (1988) found in her review of the LASSI that:

> Evidence for reliability is strong. The coefficient alpha and test-retest correlations (3 week intervals), calculated for each of the 10

> scales, range from .68 to .86 and .72 to .85, respectively. A possible concern for practical reliability could be raised regarding the Selecting Main Idea scale, which consists of only 5 items. (p. 384)

Nist, Mealey, Simpson, and Kroc (1990) found that the LASSI was reliable for a group of regularly admitted freshmen but less reliable when used with a group of at-risk students.

Reference to the validity of the LASSI in the User's Manual was ambiguous and vague and lacking in references to specific validity studies. Mealey (1988) also questioned the validity of the LASSI and concluded that more detailed information was needed. Nist, Mealey, Simpson, and Kroc (1990) concluded that validity of the LASSI was still a problem but that "the study does provide limited evidence that the LASSI has predictive validity for RAS (regularly admitted students), but the test appears not to be valid for DSS (developmental students)" (p. 49). Their findings confirmed the LASSI's usefulness as a diagnostic tool but not as a tool for predicting developmental students' performance in regular college courses.

As well, caution was used in referencing the norms established for the LASSI as it appeared that they were based on a sample of 780 students at only one university. Mealey (1988) raised two issues of concern:

> First, the LASSI was not normed on students enrolled in learning and study strategies courses, the population at which the instrument is aimed. Second, the LASSI's generalizability is questionable because data were gathered solely on 880 students attending one institution...reference is made to "national norms," a claim that appears to be erroneous. For these reasons, caution is strongly advised when using the LASSI norm data. (p. 384)

Concern for the validity of the LASSI was recognized by the researcher, but since the focus was more on diagnosis of student needs rather than on prediction of student success or failure, the LASSI was considered an appropriate diagnostic instrument for this study.

Intervention

Although the focus for this research study was early identification of "at risk" students, a review of literature related to intervention programs and practices provided some insight into what might be done to improve student retention. There appeared to be less literature pertaining to action-oriented attempts to improve retention than attempts to describe and explain the problem of attrition. Unfortunately, much of the literature about retention programs was descriptive in nature and was not empirically based. Too few interventions have been tested under

controlled conditions to be able to make any conclusive statements about the effectiveness of specific strategies or programs. The difficulty in controlling variables in an experimental type of retention study may partly explain the reason for the absence of this type of study. Boyd, Magoon, and Leonard (1981) suggested the utilization of small sample research methods testing one intervention at a time as an effective way of scientifically testing the effectiveness of specific intervention strategies. They suggested conducting several small studies simultaneously, each designed to assess one specific strategy for the purpose of providing viable answers to the question:

> What type of intervention, with which group of students, under what conditions, and at what point in time would be most powerful in retarding attrition rates? (p. 8)

Unfortunately, no followup studies of this nature appear to have been published. Notwithstanding the shortcomings of retention research, the literature does provide a practical resource for those educators interested in improving student retention. It is also important to note that each institution is unique, as are the needs of its students and, therefore, unique retention efforts are required.

It was clear from the literature that, to be meaningful, any attempt to improve student retention had to be guided by a systematic approach to identifying individual

student needs and by planning, implementing and evaluating appropriate strategies to meet these needs. Beal and Noel (1980) emphasized four actions for colleges wishing to improve retention - organization for retention with specific assignment of responsibility; study and analysis to determine the rate and factors contributing to dropout; implementation and evaluation of intervention programs; and ongoing research of local factors related to attrition and documentation of programs and practices to improve retention.

According to Levitz and Noel (1985), three major research phases should be undertaken in a systematic student retention effort - analysis of student enrollment behaviour, assessment of student-institutional interaction, and outcomes assessment.

Deborah L. Floyd (1987) included in her recommendations for action that "colleges should develop an integrated student flow model from recruitment, through assessment and planning, into intervention and beyond leaving or graduation" (p. 9). She further recommended that evaluation systems be designed to report data based on realization of student goals and aspirations and not just based on enrollment and graduation rates.

Beal and Noel (1980) identified five categories of intervention strategies reported by institutions participating in their study: testing, counselling, and

orientation; individual counselling; student peer counselling or tutoring; basic skills approaches; and college readiness programs. In all cases, the experimental groups indicated a higher rate of retention than the control groups. Although there is no evidence of the reliability and validity of these studies, they do provide practical information for those planning retention strategies.

Related to the development of an intervention model of student retention were the findings of Mallette and Cabrera (1991):

> that programs that focus on academic ability, interactions with faculty, institutional commitment, and a student's finances are likely to reduce propensity to drop out. Programs that emphasize institutional and goal commitments, on the other hand, are likely to reduce propensities to transfer to other institutions. (p. 191)

Based on his extensive work on student retention, Noel (1985) found that the key people on campus in any retention effort were classroom teachers, academic advisors, and academic administrators. Features of successful retention programs appeared to include extra attention to career/life planning and to academic advising. To deal with the problem of academic underpreparedness, he suggested more basic skills assessment for course placement, together with a supportive learning environment with a more comprehensive

set of academic/learning support services directed at affective as well as academic student development.

Reporting on the steps towards improved retention in What Works in Student Retention, Beal and Noel (1980) identified the most critical aspect to be the priority assigned to retention by the president and other senior administrators. Those institutions reporting the greatest success had a senior level position responsible for retention reporting directly to either the president or academic vice-president. Also of major importance was a "team" approach resulting in support and involvement of all areas of the institution. The authors suggested that colleges have the potential to conduct retention activities within existing courses and resources without the need for additional funds or staff and that proper referral and access are key. Proactive intervention through improved services and programs should be the goal of retention initiatives according to the authors. They referenced earlier research findings that support the importance of counselling services to the potential dropout. The authors described successful retention programs based on 40 target groups. The target group most often cited was new students (freshmen and transfers). Target groups for specific retention programs must be identified, and while this might vary from institution to institution, the authors identified four groups based on the results of the study as high-risk

and/or low academic performance; new students; undeclared majors and careers; women and adults.

In the introduction of the summary report, Toward Mastery Leadership: Strategies for Student Success (1987), the authors suggested that, as a minimum, effective student success systems must include assessment, academic placement, advising, tracking and monitoring, and other effective intervention components.

Recommendations in the report titled, Assessment, Advisement and Placement: Report on Plans for 1992, prepared by the Centre for Educational Effectiveness at Seneca are supported by the findings from the literature reviewed for this study. These recommendations included an integrated assessment and advisement system to benefit both students and the college. The system proposed is comprised of assessment, advisement, placement, and tracking.

The Aldworth (1986) study described three types of students at Seneca as academically self-sufficient, academically dependent, and academics in its place. The largest percentage of the students (i.e., 64%) were described as academically dependent, being more directly influenced than the other two groups by the things that Seneca does. These findings supported the Tinto (1975) theory of the importance of student/institution interactions.

Without exception, the retention literature reviewed emphasized the importance of the role of faculty in student persistence and success. The academic and social integration constructs of Tinto's (1975) model appeared to be significantly affected by the amount and type of interaction students have with faculty. Beal and Noel (1980) referenced the findings from earlier research which indicated that "it is the instructors who ultimately make the educational system effective and relevant" (p. 13). Caring attitude of faculty and staff and high quality teaching were identified as the most important campus characteristics by all types of institutions participating in the Beal and Noel (1980) study.

In recognition of the importance of the quality of student and faculty interaction to student satisfaction and success, a student feedback questionnaire was included as an essential component of the Performance Review for Individual Development and Enhancement program proposed by the Seneca Faculty P.R.I.D.E. report (1991).

Orientation, advising, and career assistance were recommended by Beal and Noel (1980) as important strategies for addressing the problem of lack of goal commitment or unclear program/career goal. Of the action-oriented retention programs reported by institutions participating in this study, the majority cited improvement of academic advising, followed by special orientation activities. In

considering the most appropriate interventions for this research study, academic advising and orientation programs were selected for further investigation.

Student Advisement

It appeared from the literature that a quality student advisement program would provide the most significant mechanism for students to access the appropriate college services to help them clarify and reach their educational and career goals. Floyd (1987) recommended that advising systems be implemented to foster a caring, personalized environment so that individual students "matter" to at least one individual college employee. While student advising was recognized as one of the most important retention strategies, studies of advising programs indicated that many programs are not as effective as they might be. Problems were attributed to lack of formal recognition or reward for advisors, lack of training, and lack of systematic evaluation of advising programs or advisors.

There was a significant amount of literature available describing effective advisement programs. There were very few empirical studies, however, which scientifically proved the effectiveness of these programs in increasing student retention and success.

Laurie A. Schreiner (personal communication, July 17, 1991) referenced a recent survey of academic advising conducted by American College Testing (ACT) which indicated

the most important characteristics of faculty advisors, as rated by students, to be interpersonal skills (genuine caring), meeting dynamics (being on time for meetings, knowledgeable about individual students), and knowledge of the college system and especially referral services. Important components of a successful advisement program appeared to include training for advisors; good communication between retention coordinator and faculty advisors in order to provide up-to-date information about students; clear policies and procedures; up-to-date and complete information about referral services; and available career counselling. Faculty reported that release time was their most important consideration and that less than 20% of faculty advisors get compensated for student advising. The issue appeared to be recognition for additional work; faculty want to know that what they do counts! Only 26% of participating colleges reported that they provide training for faculty advisors. In addition to training for advisors, it was suggested that advisement programs can be enhanced with newsletters, a faculty advisor handbook, and ongoing workshops. A ratio of 15 students to one faculty advisor was recommended as the optimum.

A survey of advising practices and programs indicated that "administrative recognition of the importance of advising takes precedence over all other concerns in the delivery of advising services" (Crocket, 1985, p. 254). He

found that demonstration of this support came from a comprehensive policy statement on advising, allocation of appropriate resources, explicit assignment of responsibility for the advisement program, and recognition and evaluation of advisors. In the same text, in recognition of the importance of early action, Noel (1985) recommended that advisors meet with freshmen advisees at least three times during the first term. Gordon (1985) suggested that training for advisors should consider that different advising techniques are required for different types of students. While Toy (1985) cited Fisher (1978) who "contends that faculty members clearly make the best advisers" (p. 386), Beal and Noel (1980) found that 20% of the responding 944 institutions in their study cited lack of faculty support among the factors inhibiting retention efforts. It was clear from the literature that faculty are key to the success of an advisement program but equally clear was the fact that faculty support cannot be assumed. Toy addressed this concern by proposing three factors in gaining faculty support, including convincing faculty that attrition is a serious matter, that their involvement in the initiative really matters, and that there is demonstrable institutional support for the initiative.

Beal and Noel (1980) discussed effective academic advising as an example of <u>What Works in Student Retention</u> and provided examples of such programs, including peer

advisors to assist faculty. Given the current financial restraints facing the CAATs and the ever increasing student and course loads assigned to faculty, peer advisors may be one viable method of enhancing a student advisement program.

In the Seneca College Retention Strategies Task Force Report (1988), it was recommended that there be opportunity for each student to have maximum interaction with faculty and that the college implement an academic advising program.

The Noel/Levitz College Student Inventory (CSI) utilized in this study is part of a Retention Management System (RMS) which has at its foundation a student advisement program.

Much of the literature related to academic advising reflected the focus of four-year institutions where students are required to select a major, which of course is not applicable to the CAATs. Missing from the body of research was a model of student advisement for the Ontario college system.

Orientation Programs

Titley (1985) referenced the earlier finding that "the existence of formal orientation and advising activities has a positive effect on student persistence to graduation" (p. 222). Based on his review of related literature, Titley found that the primary stated purpose of orientation is "to ease the transition to college and to aid students during the initial adjustment period" (p. 222). Beal and Noel

(1980) found that orientation programs were the third most effective retention activity overall.

Orientation programs usually take one of three forms - a summer program of one to three days; early programs which usually take place during the week prior to the beginning of the first semester; or a credit course offered during first semester. According to the literature reviewed, the most effective method of offering an orientation course appeared to be the credit course which spans the first semester. The main purpose of orientation programs appeared to be to help students make the transition to college by gaining awareness of their own abilities, motivations, attitudes and awareness of college services. In terms of Tinto's (1975) model, students' academic and social integration is encouraged through the orientation program.

Many college orientation courses are modelled on the University of South Carolina's "University 101" orientation course. Noel, Levitz, Saluri (1985) suggested that it was the best single example available of such an orientation course. Psychology of Learning and Relating (PSY 585), which is modelled on the University 101 course, is a required credit course for all first semester Computer Studies students at Seneca College. Important to this research was the fact that in addition to placing emphasis on student transition issues, including study skills, most orientation courses reported in the literature encouraged

students to develop critical thinking skills and independent attitudes towards learning.

Although there was no scientific data to support it, Ramapo College of New Jersey reported an increase in first year retention of 16% after implementing a mandatory freshman seminar course. As a winner of the Noel/Levitz Retention Excellence Award reported in A Compendium of Successful Innovative Retention Programs and Practices (1991), this college partly attributed the success of its course to selection and training of the "right" faculty who also advise students in their class on an individual basis.

It was clear from the literature that the role of orientation programs is an important one in enhancing students' academic and social integration within the institution.

Evaluation

Levitz and Noel (1985) suggested three imperatives to direct retention research efforts: "emphasize performance, design appropriate indicators of measurement, and provide data that validate performance" (p. 345) and emphasized that measurement improves performance. A comprehensive research program should be designed, they suggested, to meet three objectives - "analysis of student enrollment behaviour; assessment of the multidimensional interactions that occur between students and the collegiate environment; and

evaluation of outcomes--program effectiveness and/or intervention impact" (p. 352).

Of particular relevance to the findings of this study related to the CSI diagnostic instrument was the Schreiner (1991) study. The results indicated that "students who did not persist into their second year had significantly higher dropout proneness scale scores than those who did persist" (p. 14). Five types of students were identified based on enrollment status after one year - Enrolled, Academically Dismissed, Stopped Out, Transferred, and Withdrew. Comparisons of persisters and dropouts were made by Schreiner based on four categories of GPA - <2.00, 2.00-2.49, 2.50-3.00, and >3.00. She suggested that "using GPA after one year was probably the better measure of student success in evaluating the predictive validity of the CSI" (p. 15).

Of significance to the findings of this study related to the LASSI were the results of the Nist, Mealey, Simpson, and Kroc (1990) study. For example, "the Motivation Scale of the LASSI was significantly predictive ($p = .014$) of the RAS's (regularly admitted freshmen) semester grades, accounting for 16% of the variance" (p. 47). For the developmental studies group of students, the most significant statistical correlation was between the Concentration and Time Management scales and student GPAs.

Because of its importance to research related to but beyond the scope of this study, there follows a brief review of literature related to impact studies and a systematic approach to an intervention model of student retention. Impact studies are fraught with difficulties since it is virtually impossible to attribute outcomes to specific factors and influences. However, it appeared from the literature that there is considerable value in conducting outcomes assessment as found by Levitz and Noel (1985).

In considering the importance of the role of assessment in the process of evaluating student and institutional outcomes, Hirsch (1987) suggested that institutions must develop their own indicators of effectiveness. "Such evaluations and follow-up must examine the effectiveness of the various program components in order to ascertain which assessment instruments predict what program results for which groups of students under what circumstances and conditions" (Hirsch, 1987, p. 22). Beal and Noel (1980) emphasized the importance of obtaining basic retention information and recommended an ongoing method of tracking the past and future retention of students in specific categories.

Palmer (1989) commented on the shift in emphasis from the collection of cross-sectional data on enrollment and expenditures to the more complex tasks of longitudinal data collection and analysis. Because of the long-term resource

commitment needed, he suggested that "four-year colleges assist in tracking the educational experiences of community college transfer students" (p. 101). This concept of joint research could be interesting to explore between the CAATs and Ontario universities. Colleges must address fundamental issues and questions, such as what data are to be collected, the method of collection, how the information will be used, and student followup after leaving the college. Palmer suggested that the LONESTAR system developed for the Texas community colleges was a good example of a student tracking system. As well, he described the three sets of variables comprising the Association of American Colleges and Junior Colleges (AACJC) Student Tracking Model.

Of importance to any future study of a comprehensive intervention model of student retention is the Dietsche (1989) recommendation for a student-oriented decision support system.

Summary

To be able to address the gap that exists between our knowledge of individual student needs and our subsequent ability to meet those needs through appropriate campus resources requires accurate identification of students who are at risk of dropping out as well as individual student needs. The four areas of literature review (research, diagnosis, intervention, and evaluation) supported the need

for this research and provided the framework within which to consider the results.

Despite the innumerable retention studies reported, our understanding and knowledge of the complex and multi-dimensional problem of student attrition is still not complete. Not all attrition should be viewed as bad nor should we expect our retention efforts to be 100% successful. The Tinto (1975) and Bean (1983) models of student attrition provided the best theoretical framework for this study because of their emphasis on academic and social integration of the student as well as the importance placed on levels of student intent and commitment.

Examining literature related to the rate, timing, and causes of student attrition, as well as student and institutional characteristics, resulted in a better understanding of the problem of student attrition. This in turn supported the efforts to diagnose individual student needs and to plan intervention strategies. The literature review confirmed that the problem of student attrition is a significant one, with the rate of attrition for the CAATs at about 40% - 50%. The highest rate of attrition seems to occur in the first year, with the first six weeks being the most critical in terms of intervention. According to the literature, retention efforts must take into consideration student intentions and commitments upon entry as well as what happens after entry.

The literature was helpful in understanding the causes of attrition but was not in any way conclusive. The findings tended to be somewhat contradictory due to the large number of variables, their interrelationship and overlapping. It was important to consider institutional characteristics and student characteristics as well as the interplay between the two.

In examining the literature related to this study, it was important to recognize the problems of sampling, measurement, and design. The principal deficiency was the lack of longitudinal data, especially within the CAAT system. In future research, the impact of changing populations (i.e., older students, ethnic diversity, etc.) might be considered. Because each college campus is unique, it is important to conduct research and develop intervention practices and programs specific to the needs of each campus.

The literature confirmed that there is merit in attempting to make early diagnosis of students who are at risk of dropping out of college. In addition to identifying individual student needs so that intervention can take place, it enhances institutional planning to ensure that appropriate resources are in place. Important to diagnosis are background characteristics (i.e., academic, family, etc.), intentions and commitments, expectations of the institution and self (i.e., self-confidence, adjustment, financial, etc.), and skill sets such as study skills.

While there were reservations about the reliability and validity of the Noel/Levitz College Student Inventory (CSI) and the Learning and Study Strategies Inventory (LASSI), these two diagnostic instruments appeared to have merit as early identification tools.

A review of literature related to an intervention model of student retention confirmed that the best approach is a systematic one that is adamantly supported by the president, includes early identification of student needs, involves faculty and staff, and has a senior level person responsible for the overall retention effort. Two of the most effective retention strategies appeared to be orientation and student advisement programs. Orientation credit courses that are one semester in length appeared to be most effective as were advisement programs where faculty who genuinely care are adequately trained, evaluated and recognized.

Tracking of students which will provide longitudinal data is important to any long-term retention effort. It is important to evaluate new initiatives to assess their impact, to monitor for purposes of improvement, to analyze the cost-benefit factors, and because measurement improves performance.

Finally, it is important to note that this study relied heavily on the literature available from studies in the United States because of the lack of similar Canadian studies. It is evident that there is a need for Canadian

universities and colleges to engage in more institutional research related to student retention to supplement the existing small base of published material.

CHAPTER THREE: METHODOLOGY AND PROCEDURES

Overview

This research was undertaken as a pilot study of a sample population of first semester students enrolled in the School of Computer Studies at Seneca College to assess the usefulness of two diagnostic instruments in identifying students at risk of dropping out. Because of the complexity of the problem of student attrition, this study did not attempt to go beyond discovery, understanding and description. Although some inferences may be drawn from the results of the study, no attempt was made to establish any causal relationship between or among the factors or variables represented here. This is not to say that certain elements might not be analyzed in an inferential way, and the reader may, as a result of observation, infer logical relationships.

Restatement and Elaboration of the Research Problem

The problem in this study was to determine the usefulness of two diagnostic instruments for identifying first semester students at risk of dropping out of the School of Computer Studies at Seneca. A related sub-problem was the determination of factors contributing to current student attrition within the School of Computer Studies. The purpose of this research was to help bridge the gap that exists between theory and practice and to explain the "why"

of student attrition rather than to develop a theoretical model to predict whether students will drop out of college.

Research Approach

In some respects, the research approach was such as might be taken in a pilot study. It was based on a discovery and understanding methodology and, as descriptive research, was non-experimental and included both quantitative and qualitative elements.

The research was completed in four related phases as follows:

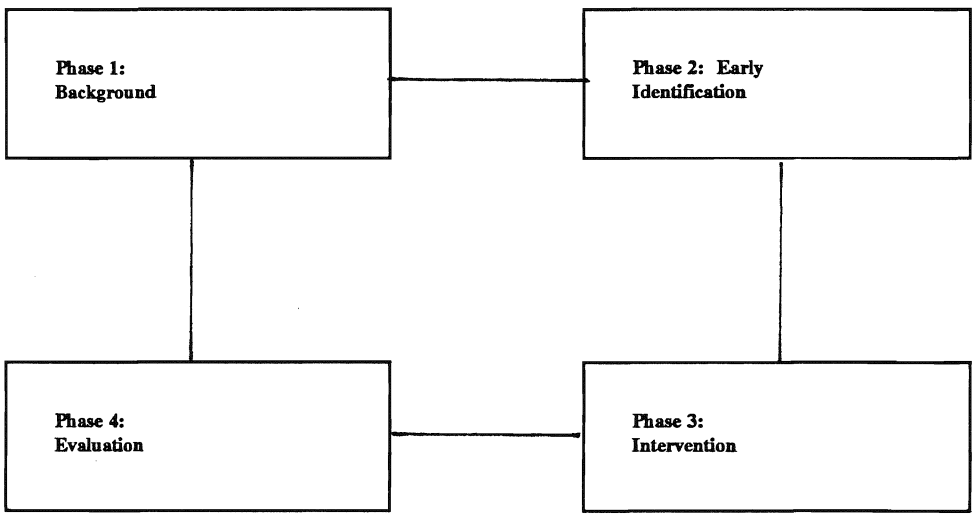


Figure 3. Four research phases.

Subsequent sections of this chapter (i.e., Pilot Studies, Selection of Subjects, Instrumentation, Procedures, Data Collection and Recording, and Data Processing and Analysis) will be discussed in term of the four research phases.

The following methods of data collection were used:

1. Retrospective analysis of enrollment statistics for Computer Studies students at Seneca.
2. Interviews to gather Seneca student and faculty anecdotal accounts of factors contributing to student attrition and strategies to improve retention.
3. Two questionnaires administered to faculty and students within the School of Computer Studies to gather data related to a ranking of the factors and strategies referred to in #2 above.
4. Two diagnostic instruments administered to a sample of Computer Studies first semester students to identify those potentially at risk of dropping out.
5. Tracking of the student sample, utilizing a computerized database, to discover and describe the process of attrition and to determine the effectiveness of the diagnostic instruments in identifying students at risk.
6. Interviews to gather faculty and student anecdotal accounts of the usefulness of the diagnostic

instruments and the preliminary interventions implemented as part of this study.

In Phase 1, an ex post facto method was utilized to provide an historical perspective on student attrition patterns between first and second semester within the School of Computer Studies. The gathering of anecdotal accounts from faculty and students utilized a qualitative approach through interviews and the use of an open-form or unrestricted type of questionnaire. Subsequently, a quantitative analysis of the results of two questionnaires was completed in order to determine faculty and student perceptions of the problem of student attrition within the School of Computer Studies and the type of interventions that might be successfully implemented.

The two diagnostic instruments administered in Phase 2 provided quantitative data which were subsequently analyzed in Phase 4 in order to assess their usefulness as early identification instruments.

During Phase 3, a qualitative approach was used for purposes of intervention. Because of limited resources, no formal interventions were implemented as part of this research nor was any effort made to measure the effectiveness of the informal attempts at intervention. However, anecdotal accounts of students, faculty, and counsellors in this regard were gathered in a qualitative manner.

A quantitative approach was taken in Phase 4 by tracking the student sample through the use of computer database software to analyze student enrollment behaviour and to assess the effectiveness of the diagnostic instruments in identifying students at risk of failing or dropping out. A qualitative approach was also taken during this final phase to gather staff and student perceptions of the usefulness of the diagnostic instruments and the preliminary intervention activities.

Research Questions

This section sets out the central questions examined in this study in order to assess the potential of early identification and intervention for retention of students. In order to design an effective intervention model of student retention for the School of Computer Studies, the following questions were posed -

1. What are the historical patterns of student attrition between first and second semester?
2. How may the factors contributing to student attrition be identified?
3. How may strategies to reduce student attrition be identified?
4. What is the process of first semester student attrition, including rate, timing, and causes?

5. How useful is a diagnostic instrument in identifying students at risk of dropping out in first semester?
6. Which intervention strategies might be the most effective in improving student retention in first semester?

Pilot Studies

Two pilot studies were conducted for purposes of providing feedback on the design and content of the questionnaires administered in Phase 1 and the diagnostic instruments administered in Phase 2, and questions were deleted, added and modified where appropriate.

Phase 1: Background

For purposes of pilot testing the questionnaires developed in Phase 1, the subjects were chosen based on a willingness to participate. Of the 15 faculty questionnaires distributed in April 1991 at a meeting of the Seneca Skills Assessment Committee, eight were returned anonymously. The student questionnaire was completed anonymously in April 1991 by a total of 50 Seneca Newnham Campus students comprised of one class of 4th semester General Business students, one class of 1st semester Computer Programming students, and one class of 1st semester General Arts & Science students. An explanation of the purpose of the pilot test and the questionnaire was given by

the researcher prior to completion by faculty and students. In addition to completing the questionnaire, faculty and students were asked to comment on the design and appropriateness of the questionnaire.

Both questionnaires utilized a Likert-type scale to gather faculty and student responses to 16 possible factors contributing to attrition and to 15 possible strategies which might improve retention. Several open-ended questions allowed for additional comments from faculty and students. Data were analyzed manually to determine frequency distributions of the variables being considered. The findings from the sample data were substantially confirmed by the findings from the subsequent administration of the questionnaires.

Phase 2: Early Identification

The second pilot study was conducted with a sample of six students who volunteered to complete the Noel/Levitz College Student Inventory (CSI) in order to provide feedback on the design and content of the diagnostic instrument and to determine its appropriateness for this research study. Because the Learning and Study Strategies Inventory (LASSI) was currently in use at Seneca, it was considered unnecessary to conduct a pilot study in this regard. Samples of LASSI student reports and perceptions of the faculty using the instrument were gathered and considered by the researcher to determine its appropriateness.

For purposes of pilot testing the CSI, the subjects were chosen randomly based on a willingness to participate. Of the 10 CSIs distributed to students, five currently attending Seneca and five external to Seneca, six completed instruments were returned and subsequently forwarded to the publisher for computer analysis and report.

Analysis of the sample data was undertaken by the publisher by way of computer program and resulted in sample student and advisor reports, together with summary reports designed to facilitate institutional intervention. The findings from the sample data were substantially confirmed by the findings from the subsequent administration of the CSI.

Feedback received from students during this pilot study was considered and reflected in the final administration of the diagnostic instruments in Phase 2 and the approaches to intervention in Phase 3.

Selection of Subjects

The subjects for the various phases of this research study were selected as follows:

Phase 1: Background

A sample of convenience consisting of ten full-time Seneca faculty and eight second-year Seneca students was selected on a volunteer basis for the interviews conducted in Phase 1. The faculty group of ten was comprised of three

males and seven females, one of whom was a counsellor, one an administrator, and eight were faculty. Five academic areas and two major campuses were represented in the faculty group. The student group of eight was comprised of three males and five females, with representation from six different programs and two major campuses. The student subjects were studying at Seneca in either the first, second, or third year of their programs. Programs represented included Computers, Technology, Travel and Tourism, Business, General Arts and Science, and Interim Semester (a remedial program).

Subsequently in Phase 1, a sample of 23 faculty and 131 third and fifth semester students in the School of Computer Studies at Seneca voluntarily completed the questionnaires designed to gather perceptions of possible factors contributing to attrition and effective strategies for improving retention. A questionnaire was distributed to faculty at a meeting after an explanation of its purpose, with a further copy being distributed by inter-office mail six weeks later to improve the rate of return. Visits were arranged to all third and fifth semester classes for purposes of administering the student questionnaire. Students who were in attendance during these scheduled visits participated in the study on a voluntary basis. These samples represent about 66% of faculty teaching in

Computer Studies and about 63.9% of third and fifth semester students.

Phase 2: Early Identification

Previous research indicated that the highest rate of attrition occurs in the first year of enrollment. Anecdotal accounts of faculty and students, together with the results of the analysis of first-year enrollment patterns, indicated that student attrition is a significant problem within the School of Computer Studies. Therefore, a sample of 319 Seneca first semester students enrolled in the School of Computer Studies was selected for the early identification and intervention phases of this study. Visits were arranged to all Psychology of Learning and Relating (PSY 585) classes for purposes of administering the diagnostic instruments and providing feedback to students. Students who were in attendance during these scheduled visits participated in the study on a voluntary basis. This sample represents 75.6% of the total first semester population.

Phase 4: Evaluation

For purposes of gathering anecdotal accounts related to the usefulness of the two diagnostic instruments and the preliminary intervention activities, interviews were conducted with four PSY 585 professors, the first-year Computer Studies coordinator, two college counsellors, the

Dean and Chair of Computer Studies, and a random sample of eight students who had participated in the study.

Instrumentation

The following instruments were utilized in the four phases of this study:

Phase 1: Background

An open-form questionnaire (see Appendix A) was used to record the anecdotal accounts of faculty and students during the interviews conducted in this phase. Based on the findings of previous research and an analysis of the data gathered from the interviews during Phase 1, faculty and student questionnaires (see Appendices B and C) were formulated in consultation with the Faculty of Education at Brock University and the Centre for Educational Effectiveness at Seneca College. The questionnaires were designed with a Likert-type scale for ease of response and tabulation and also included open-ended questions. Slight modifications to design and content were made based on comments from the pilot group.

Phase 2: Early Identification

For purposes of the early identification phase, the following diagnostic instruments were reviewed:

1. Freshman Questionnaire, developed by Peter Dietsche (1989).
2. American College Testing (ACT) Study Skills Inventory.

3. Student Adaptation to College Questionnaire (SACQ).
4. Noel/Levitz College Student Inventory (CSI).
5. Learning and Study Strategies Inventory (LASSI).

Based on a literature review and anecdotal reports of college faculty and staff who had used these instruments, the Noel/Levitz CSI and the LASSI (see Appendices D and E) were selected for purposes of this research study. Because of its appropriateness for the CAAT system, the Dietsche freshman questionnaire was carefully considered. However, it had been used in only one study at one institution and appeared to be lacking in terms of reliability and validity. Also, it did not take the comprehensive approach to identifying individual student needs that the Noel/Levitz CSI did. Further studies proving its validity and reliability would support adapting this instrument for use at Seneca in the future.

A review of the Student Adaptation to College Questionnaire (SACQ) indicated that it might be more appropriately used as a mid-term measurement of student adaptation to college and not as a measure of student satisfaction with college. Since the purpose of this study was to assess the potential of early identification instruments, the Noel/Levitz CSI was considered more appropriate than the SACQ.

The ACT Study Skills Inventory and the Learning and Study Strategies Inventory (LASSI) were reviewed for the

purpose of diagnosing student attitudes and self-reported skills for learning and studying. A more comprehensive assessment appeared to result from the ten LASSI scales compared to the five scales in the ACT instrument. As well, favourable results were reported by Seneca faculty using the LASSI instrument in the PSY 585 course.

The reader is directed to Chapter 2 for a review of literature related to the reliability and validity of the two diagnostic instruments selected for this study and is reminded that the primary focus here is diagnosis rather than prediction.

Noel/Levitz College Student Inventory (CSI)

The CSI was developed through a seven-year research program based on theoretical work started in 1971. The instrument, currently in its third revision, is self-administering and consists of 194 items. The 19 major independent scales include Study Habits, Intellectual Interests, Academic Confidence, Desire to Finish College, Attitude Toward Educators, Self-Reliance, Sociability, Leadership, Ease of Transition, Family Emotional Support, Openness, Career Planning, Sense of Financial Security, Receptivity to Academic Assistance, Receptivity to Personal Counseling, Receptivity to Social Enrichment, Receptivity to Career Counseling, Initial Impression of the Institution, and Internal Validity. As well, there are four summary scales of academic motivation reported as stanines: Dropout

Proneness, Predicted Academic Difficulty, Educational Stress, and Receptivity to Institutional Help. The first two of these scales were constructed based on analyses of the results of a pilot study of 1,030 students from eight United States colleges and universities. Receptivity to Institutional Help is a combination of the four receptivity scales, and Educational Stress is also a combination of several other scales. In addition, the CSI contained demographic information about the student and a list of prioritized recommendations for intervention, weighted on the basis of the student's need and receptivity for the campus service.

Learning and Study Strategies Inventory (LASSI)

The LASSI was developed as part of the Cognitive Learning Strategies Project at the University of Texas at Austin in 1978. As a self-administering assessment tool, it was designed to measure students' attitude toward and use of learning and study strategies and methods. Using a Likert-type scale, it measured both affective and cognitive processes based on ten scales: Attitude, Motivation, Time Management, Anxiety, Concentration, Information Processing, Selecting Main Ideas, Study Aids, Self-Testing, and Test Strategies. The instrument used a self-report format, including a simple scoring scheme for students to compute their own scale scores directly on the instrument.

Phase 3: Intervention

An open Individualized Advisement Session form (see Appendix F) was used by PSY 585 faculty and campus counsellors to record the results of individualized advisement sessions initiated as a result of the preliminary interventions in this phase.

Phase 4: Evaluation

An open-form questionnaire (see Appendix G) was used to record the anecdotal accounts of staff and students during the interviews conducted in this research phase.

Procedures

In this section, the procedures will be described for each phase of this research study. It was important to obtain the support of the Senior Vice-President, the Dean of Academic Planning, the Dean of the Centre for Educational Effectiveness, and the Deans of the School of Computer Studies and the Liberal Studies Division. Their significant commitment to and support for this research greatly facilitated its completion.

Phase 1: Background

To develop a better understanding of the rate of student attrition between first and second semester at the School of Computer Studies, a retrospective analysis of the enrollment statistics for first and second semester for the previous five years, 1986 to 1990, was completed. This was

accomplished by comparing the total student enrollment for first semester Computer Studies on Day 10 of Semester 1 (Fall of each of the years 1986 to 1990) with the total student enrollment on Day 10 of Semester 2 (Winter of each of the years 1987 to 1991).

Subjects for the faculty and student interviews were selected and invited to meet individually in the researcher's office at various times during the months of March and April, 1991. During the interviews, an open-form questionnaire (see Appendix A) was used to record the anecdotal accounts of faculty and students. An explanation of the purpose of the interview was given and the interview was conducted on the basis of the questions shown in Appendix A. The participants responded to the questions in an open and honest manner, freely offering comments about their perceptions of the problem of student attrition.

For purposes of administering the questionnaire to faculty, the researcher attended a School of Computer Studies general meeting on August 27, 1991. A presentation was made to the Computer Studies administration and faculty explaining the purpose of the research study, the attrition problem as it appeared to exist in Computer Studies, the purpose of the questionnaire, and the importance of the role of faculty in any student retention initiatives. Twenty-one copies of the faculty questionnaire were distributed at the meeting with the request that they be completed anonymously

and returned to the researcher. Subsequently, an additional 12 questionnaires were distributed through interoffice mail to General Education professors (i.e., English and Liberal Studies) who were teaching courses to Computer Studies students with a covering memo requesting the completion and return of the questionnaires. In October, 1991, the Chair of Computer Studies distributed a reminder memo to all faculty requesting the return of the questionnaire. On November 5, 1991, a further copy of the questionnaire was distributed to all 35 Computer Studies faculty, together with a covering memo requesting the completion and return of the questionnaire if it had not already been done.

To achieve a high rate of return for the student questionnaires, personal visits to seven third and fifth semester classes were arranged during the month of November, 1991. In response to a memo from the Chair of Computer Studies, professors indicated a time for the researcher to attend their classes to administer the questionnaire. A copy of the questionnaire was given to the professor in advance and, in some cases, the professor chose to remain in class during administration of the questionnaire. The purpose of the questionnaire was explained to each group of students and the importance of their perceptions as students who had been at the college for two or three years was emphasized. They were encouraged to be open and honest and reminded that completion of the questionnaire was to be

anonymous and that the confidentiality of individual responses would be strictly adhered to. Students were appreciative of the opportunity to give feedback in this regard and commented orally that they felt the attrition rate in Computer Studies was probably around 60%. No one declined to complete the questionnaire. Once completed, they were returned directly to the researcher, who in turn thanked the students for their participation and wished them well in the remainder of their studies.

Phase 2: Early Identification

In order to satisfy the requirements for ethical research with human participants, a proposal was submitted to the Brock University Ethics Committee and approval granted (see Appendix H). In order to obtain access to student records, a proposal was submitted to the Dean of Academic Planning at Seneca College and approval granted (see Appendix I).

In order to administer the diagnostic instruments, it was necessary to gain the support and involvement of all five PSY 585 professors to permit the study to be carried out during their classes. Support was first obtained from the Dean and Chair of the Liberal Studies Division, who subsequently requested the cooperation of the five professors. On August 29, 1991, the researcher met with the five PSY 585 professors to explain the research study and to solicit their support and cooperation (see agenda attached

as Appendix J). The study was referred to as **A Student Alert Project (ASAP)**, and a preliminary faculty information manual (see Table of Contents attached as Appendix K) was provided to the administrators, faculty and counsellors participating in the study. At the meeting, presentations were made by each of the college service areas and documentation was provided to facilitate the advisor role being proposed to the PSY 585 professors. In consultation with the PSY 585 professors, a schedule was prepared for meeting with all 14 classes of first semester students during the month of September, 1991.

The Noel/Levitz College Student Inventory (CSI) was administered personally by the researcher during the first two weeks of classes to nine groups of students, and the Learning and Study Strategies Inventory (LASSI) was administered during the third and fourth weeks of classes to 11 groups. So that a comparison of the results of the two instruments could be made to determine which is the most useful in identifying students at risk of dropping out, 101 students completed the CSI only, 140 completed the LASSI only, and 88 completed both the CSI and the LASSI. Administration of the CSI required approximately one hour 40 minutes of class time to ensure all students had sufficient time, while the LASSI required approximately 50 minutes of class time.

Most of the PSY 585 professors chose to be present during administration of the instruments and demonstrated strong support for the project, highlighting the benefits of the study to students and the relationship of the findings to the PSY 585 course. Prior to completion of the diagnostic instruments, the researcher informed students both in written and oral form about the research study and their role in it (see Appendices L and M). Student participation was voluntary and emphasis was given to the confidential treatment of the data being gathered. Students were requested to indicate whether or not they authorized the release of information generated by the two instruments (see Appendices N and O). With the exception of students who chose not to participate and left the room prior to completion of the instrument and those students who were not in attendance on that particular day, all students willingly participated in the study. The researcher was available at all times during completion of the instruments to answer student questions about the study and to assist in interpretation of the instruments.

Completion of the CSI required students to complete a computerized answer sheet with a pencil provided by the researcher. As a self-scoring instrument, students were able to plot their scores on a graph for each of the ten scales of the LASSI. Once the instruments had been completed, all materials were returned directly to the

researcher, who in turn thanked the students for their participation and wished them well with their studies. Students were advised that the results of the diagnostic instruments would be returned to them within two weeks of completion.

Once all the CSI instruments had been administered, the answer sheets were reviewed for proper completion and 182 of the 187 sheets were immediately forwarded by Priority Post to the publisher for computerized data analysis and report. Five answer sheets were incomplete and therefore rejected. Within one week, a student report and advisor's report (see samples attached as Appendices P and Q) for each student who had properly completed the CSI were received by the researcher, along with summary reports (see Appendix R) for all students. Five student answer sheets were rejected by the publisher because of 10 or more omissions, resulting in a total sample for the CSI of 179 students.

Upon completion of the administration of the LASSI instruments, they were reviewed for completeness and, where necessary, calculations were completed by the researcher. No instruments were rejected, resulting in a total sample for the LASSI of 228 students. Class summaries of the student scores for each of the 10 scales were prepared by the researcher (see sample attached as Appendix S).

Phase 3: Intervention

The reader is reminded that the major focus of this study is early identification and that the preliminary attempts at intervention reported here were mainly carried out by the PSY 585 professors acting in a voluntary capacity and by the researcher herself. The intervention activities were initiated more out of a sense of responsibility to the students, having diagnosed areas of need, rather than in an attempt to measure the effectiveness of these activities. The reader is referred to the recommendations for future research section of Chapter Five.

On October 3, 1991, the researcher met with the Dean of Computer Studies, the PSY 585 professors, and the counsellors at the School of Computer Studies. Where authorized in writing by the students participating in the study, copies of the CSI advisor reports and LASSI student reports, together with the LASSI class summaries, were distributed to the PSY 585 professors to facilitate their role as faculty advisors. As well, copies of the CSI summary reports for all students (see Appendix R) were provided to the Dean and Chair of Computer Studies, the PSY 585 professors, and the campus counsellors. The results of the diagnostic instruments were discussed generally and categories of student needs identified for purposes of matching existing college resources. The procedure for feedback and intervention for students was discussed, and a

schedule was prepared in consultation with the PSY 585 professors for class visits by the researcher. Based on discussions at the October 3 meeting and on input from student service areas of the college, a Schedule of Student Resources (see Appendix T) was prepared, together with a Description of the LASSI Scales and Recommendations for Action (see Appendix U). An Individualized Advisement Session form (see Appendix F) was developed and copies were distributed to the PSY 585 professors and the counsellors for purposes of recording student interviews initiated as a result of the interventions described in this phase.

During the first two weeks of October 1991, the researcher attended 14 sessions of PSY 585 and distributed the CSI student report and LASSI student's copy, together with the Description of the LASSI Scales and Recommendations for Action and the Schedule of Student Resources, to individual students present on that day. The reports of those students who were absent on that particular day were subsequently distributed by the PSY 585 professors if authorization had been given by the students for release of the information. Otherwise, students were advised that the reports were available from the researcher. To assist students in the interpretation of the results of these two instruments, an explanation was given by the researcher during the class session, referring to a sample student report by way of overhead projector. Students were

encouraged to ask questions related to the reports and to the college services available to assist them to succeed. Students were referred to the specific recommendations contained in their CSI student report (Appendix P) and the Description of the LASSI Scales and Recommendations for Action (Appendix U). Emphasis was given to the fact that the reports might not necessarily give a totally accurate description of individual students and that they were intended only to provide some insight into individual strengths and weaknesses for purposes of further reflection and discussion. Students were encouraged to discuss the reports further with their PSY 585 professor or with a college counsellor.

The role of the PSY 585 professors as faculty advisors was strictly voluntary and in most cases was not intrusive but responsive to student initiation.

Phase 4: Evaluation

On December 18, 1991, the researcher attended the end-of-semester promotion meeting, at which time the academic outcomes for first semester students were discussed. In January, 1992, student records for the sample group were reviewed to determine cumulative grade point average (GPA), current enrollment status, and timing of and reason for leaving the college if not re-enrolled for Spring 1992. Based on GPA and enrollment status as of Day 10 of the Spring 1992 semester, five student groups were identified as

successful persisters, successful persisters - weak, successful withdrawals, unsuccessful persisters, and unsuccessful withdrawals. The results of the two diagnostic instruments were then compared to the five categories of students.

Interviews were conducted during the month of January 1992 by the researcher for purposes of gathering anecdotal reports from faculty, administrators, counsellors, and students as to their perceptions of the usefulness of the diagnostic instruments and the preliminary interventions that were implemented.

Data Collection and Recording

Data collection and recording for the various research phases was undertaken as follows:

Phase 1: Background

Access to college records permitted the researcher to ascertain student enrollment statistics for Semesters 1 and 2 for each of the five years 1986 to 1990.

During the faculty and student interviews conducted in this phase, anecdotal accounts were collected and recorded on an open-ended questionnaire (see Appendix A). The data were organized on the basis of faculty responses and student responses to allow a comparison between the two groups. The data were further organized into two categories, the first related to the factors contributing to student attrition and

the second related to the best strategies for reducing student attrition. The data were then recorded in a WordPerfect 5.1 file for reporting purposes.

The data collected from the faculty and student questionnaires in Phase 1 were recorded in a dBase III+ file specifically designed with appropriate fields for this purpose. The data were subsequently transferred into a Lotus 1-2-3 (3.1) spreadsheet file specifically designed with appropriate fields for analysis and reporting purposes. Selected faculty and student comments were transferred from the dBase III+ file to a WordPerfect 5.1 file for reporting purposes.

Phase 2: Early Identification

Computerized answer sheets were completed by students for purposes of recording their responses to the CSI, and carbon forms were completed by students to record their responses to the LASSI. The data collected in this manner included student names and ID numbers to enable tracking of individual students. The student scores on the four summary scales of the CSI Advisor's Report (see Appendix Q) - Dropout Proneness, Predicted Academic Difficulty, Educational Stress, and Receptivity to Institutional Help - and the ten scales shown on the LASSI Student's Report (see Appendix S) - Attitude, Motivation, Time Management, Anxiety, Concentration, Information Processing, Selecting Main Ideas, Study Aids, Self-testing, and Test Strategies -

were recorded in a Lotus 1-2-3 (3.1) spreadsheet file specifically designed with appropriate fields for this purpose. The data were subsequently transferred to a dBase III+ file specifically designed with appropriate fields to record these data as well as data collected and recorded during Phase 4.

Phase 3: Intervention

An Individualized Advisement Session form (see Appendix F) was used by PSY 585 faculty and college counsellors to record student interviews resulting from the intervention activities in this research phase.

Phase 4: Evaluation

During the evaluation phase, data related to students' cumulative GPA, current enrollment status, and timing of and reasons for leaving the college if not re-enrolled were transferred from the Seneca VAX to a dBase III+ file specifically designed with appropriate fields for this purpose. The data recorded in the Lotus spreadsheet during Phase 2 were also transferred to this database file for analysis and reporting purposes.

Anecdotal accounts of faculty, administrators, counsellors, and students gathered during the final stage of this study were summarized and recorded in a WordPerfect 5.1 file for reporting purposes. The data were organized according to faculty responses and student responses to

allow a comparison of the two groups and were further organized into categories related to the usefulness of the two diagnostic instruments and the preliminary attempts at intervention.

Data Processing and Analysis

For purposes of supporting and extending the descriptive nature of this study, data processing and analysis was completed during the research phases as follows:

Phase 1: Background

Analysis of the rate of attrition between 1st and 2nd semester in the School of Computer Studies was completed by manually comparing the total 1st semester student enrollment as of Day 10 of Semester 1 (Fall) with the total 2nd semester student enrollment as of Day 10 of Semester 2 (Spring), for each of the five years 1986 to 1990. The number and percentage of student withdrawals from Computer Studies is shown in table form.

The qualitative data recorded during the interviews in Phase 1 were organized using key phrase analysis for purposes of analyzing and comparing faculty and student perceptions of the major causes of attrition and the best intervention strategies to reduce student attrition. The responses related to causes of attrition ranked in terms of frequency and significance are shown in table form. The

responses related to strategies to reduce student attrition were clustered and are shown in table form.

Frequency distributions and representation of the data in bar graph form depicts the distribution of the variables being considered in the faculty and student questionnaires completed in this phase. The relationship between the two sets of faculty and student data was determined in order to highlight significant differences. Faculty and student responses to open-ended questions were organized using key phrase analysis, and only those data which were considered to be significant and important were reported.

Phase 2: Early Identification

The data collected and recorded by the CSI instruments were forwarded to the publisher for computer processing and analysis. This computer analysis generated individual student reports (see Appendix P), advisor reports (see Appendix Q), and summary reports (see Appendix R).

The LASSI diagnostic instrument was scored by students and resulted in individual student reports indicating scores on ten different scales. Class summaries of student scores were computed to permit students to compare their scores with the class average (see Appendix S).

In order to compare the distribution of scores for the sample population to the normative sample, a summary of all LASSI student scores showing the mean for each of the ten scales was computed and is presented in table form.

Phase 3: Intervention

The data gathered by Individualized Advisement Session forms (see Appendix F) completed during this phase were analyzed manually, resulting in a description of the rate and nature of student response to the preliminary interventions.

Phase 4: Evaluation

Five categories of students were identified for analysis purposes in this phase based on GPA and enrollment status as of Day 10 of the Spring 1992 semester as follows:

	GPA	Enrollment Status
Successful Persisters	>2	Sem. 2, Computer Studies
Successful Persisters-Weak	<2	Sem. 2, Computer Studies
Successful Withdrawals	>2	not re-enrolled at Seneca
Unsuccessful Persisters	<2	Sem. 1, Computer Studies or elsewhere at Seneca
Unsuccessful Withdrawals	<2	not re-enrolled at Seneca

Representation of the data in table form depicts the frequency distribution and the percentage of the entire sample for each of the five categories. The successful persisters - weak category represents those students who were promoted to Semester 2 but who were successful in three or less of the five credits undertaken in first semester. The rate of student attrition was determined based on the two categories of Successful and Unsuccessful Withdrawals.

As well, the percentage of persisters who appeared to be at risk was analyzed and reported.

Frequency distributions and representation of the data as they relate to timing and reasons for withdrawal for the two categories of withdrawals (i.e., successful withdrawals and unsuccessful withdrawals) are shown in table form.

In order to assess the usefulness as early identification tools of the two diagnostic instruments administered in Phase 2, several analyses were conducted by comparing the results of the CSI and LASSI with the GPAs and enrollment status of the sample population.

Frequency distributions and representation of the data as they relate to the Dropout Proneness and Receptivity to Institutional Help summary scales of the CSI are presented in line graph form. This analysis permitted comparison of the scores for the sample population to those of the normative sample. As well, the findings for both of these scales in terms of frequency distributions related to student enrollment status are presented in table form.

For purposes of discovering and describing the relationship of the independent variables (i.e., the scores on the ten LASSI scales) to the dependent variable (i.e., enrollment category), a summary of LASSI percentiles was prepared for each of four categories of students (i.e., unsuccessful withdrawals, successful withdrawals, successful persisters, and unsuccessful persisters). For purposes of

further discovery and description, students' GPAs and CSI Dropout Proneness scores were included in these summaries. The findings for these summaries are reported in table form. Due to the complexity of the relationship between the results of the LASSI ten scales and the enrollment status of the sample population, a random sample of the successful persisters and unsuccessful persisters was selected for purposes of summarizing, discovering, and describing the apparent relationship between the variables. The reader's attention is directed to the recommendations for further research section of Chapter Five.

The qualitative data recorded during the interviews in this final phase were analyzed manually, resulting in a description of staff and student perceptions of the usefulness of the two diagnostic instruments and the preliminary intervention strategies.

Methodological Assumptions

The research methodology applied in this study was based on several assumptions. First, it was assumed that the random sample of faculty and students selected for the interviews in Phases 1 and 4 were generally representative of the total populations from which they were drawn. Second, the objectivity and openness of faculty and students, as well as lack of fear of reprisal, during all phases of the research was assumed. Third, because of their extensive use in other similar settings, it was assumed that

the diagnostic instruments selected for Phase 2 of the study are methodologically sound.

Limitations

Since this research could be considered as a pilot study of the potential of early identification and intervention for student retention, it is subject to the limitations inherent in a pilot study. Since the problem of student attrition is a complex one, it is virtually impossible to develop a conclusive model of student retention in a single pilot study. However, this research study contributes to the small research base presently existing at Seneca and other CAATs and provides a better understanding of the problem, as well as identifying areas for further research.

The results could be improved by conducting a more extensive analysis of the data (e.g., multiple regression analysis) in order to determine the correlation coefficients of the independent and dependent variables. By carrying out further research with a longitudinal and experimental design, attempts could be made to discover any causal relationship between or among the factors or variables represented in this study. While the task of isolating individual variables related to the problem of student attrition is a complex one, more expansive long- and short-term research is required to extend the description provided in this study.

The self-report diagnostic instruments used in Phase 2 are subject to students answering in a manner they perceive to be "right." Both the CSI and the LASSI were developed in the United States, although the CSI has been slightly adapted for use in Canada. The national norms established for the two diagnostic instruments were based on studies done in the United States. Local or institutional norms would facilitate more accurate findings. It is difficult to avoid the cultural bias that exists in all commercial diagnostic tests of this nature. For example, the terms "cramming" and "cannot see the forest for the trees" found in the LASSI instrument required interpretation for students who had not received the majority of their education in North America. Some questions contained in the CSI were more relevant for recent high school graduates than for older students. A diagnostic instrument developed, tested and validated specifically for use at Seneca would probably produce more accurate results.

Chapter Summary

This chapter has described the approach taken during the four phases of this descriptive research study. The research questions have been restated, and the methods of data gathering and analyses have been specified.

CHAPTER FOUR: FINDINGS AND SYNTHESIS

Overview

In this chapter, the findings are presented and synthesized for each of the four research phases: background; early identification; intervention; and evaluation. As well, they are discussed in relation to the questions identified in Chapter One.

Findings from the first research phase are presented in table and bar graph form and provide the reader with background information about the attrition problem within the School of Computer Studies at Seneca, as well as possible strategies for improving student retention. Understanding the problem provides a basis for action, as well as a benchmark against which to measure any future rate of improvement.

The results of the two diagnostic instruments administered in the second phase are contained in the Appendix section of this report. Early identification of students who may be at risk of failing or dropping out of college through the use of a diagnostic instrument provides a basis for institutional intervention.

Due to a lack of resources, no attempt was made to implement and evaluate formal interventions during the third phase. The findings from the preliminary attempts at intervention are based on written feedback given by PSY 585 professors and one campus counsellor. These findings are reported in this chapter in anecdotal form.

The findings from the final research phase are presented in table and graph form and are based on the results of tracking the sample group of students from Day 10 of Semester 1 to Day 10 of Semester 2. An analysis of the data gathered during this period provided the basis for evaluating the usefulness of the two diagnostic instruments and the preliminary intervention strategies. As well, it provided the data necessary to describe the dimensions of the attrition process, including rate, timing, and causes.

Phase 1: Background

Several methods of data gathering and analyses were utilized during this research phase in order to understand and describe the process of student attrition within the School of Computer Studies at Seneca.

Retrospective Analysis of Enrollment Data

A simple analysis of the enrollment statistics for first and second semester Computer Studies programs for each of the five academic years, 1986/87 to 1990/91, was undertaken to address the question:

- **What are the historical patterns of student attrition between first and second semester?**

The number and percentage of student withdrawals during this five-year period are shown in Table 1.

Table 1

Attrition Rates Between First and Second Semesters

Academic Year	Enrollment Day 10, Sem. 1	Enrollment Day 10, Sem. 2	Number of Withdrawals	% of Total Sample
1986/87	190	142	48	25.3
1987/88	170	129	41	24.1
1988/89	173	122	51	29.5
1989/90	297	195	102	34.3
1990/91	312	223	89	28.5

These findings reflect a significant rate of attrition between first and second semester, ranging from 24.1% to 34.3%. No attempt was made to analyze the variance from year to year in the attrition rates or the reasons for withdrawal, although the faculty strike during the Fall of 1988 may have been a contributing factor in that period. While this retrospective analysis does not account for unsuccessful persisters (i.e., students who were enrolled at Seneca somewhere other than Semester 2 of Computer Studies), the findings do appear to support the need for early identification and intervention.

In order to address the research questions:

- **How may the factors contributing to student attrition be identified?** and
- **How may strategies to reduce student attrition be identified?**

a two-step process was completed. First, a random sample of ten full-time Seneca faculty and eight full-time second-year Seneca students were interviewed, and subsequently a questionnaire was developed and completed by a sample of 23 faculty teaching at the School of Computer Studies and 131 third and fifth semester Computer Studies students.

Faculty and Student Interviews

Appendix V contains a detailed analysis of the faculty and student interviews. Tables 2 and 3 present the major causes of attrition as reported by faculty and students in

terms of frequency and ranking. Using key phrase analysis, the responses were clustered under specific headings to facilitate interpretation.

Table 2

Faculty Perceptions of Attrition Factors

Factor	Frequency	Rank (1-5)
Weak academic skills	10	2.4
Lack of career/program focus	10	2.1
Poor teacher/student interaction	6	2.5
Transition from high school	4	2.5
Part-time jobs	3	4.7
Time management, study skills, organizational ability	3	4.0
Personal problems	3	3.0
Lack of self-confidence	2	3.5
Financial	2	3.5
Lack of integration	1	3.0

Note. The results are based on responses from ten Seneca professors who each identified five major attrition factors and ranked them on a scale of 1 to 5, with one being the most significant and five the least.

Table 3

Student Perceptions of Attrition Factors

Factor	Frequency	Rank (1-5)
Lack of career/program focus	6	2.8
Transition from high school	5	1.5
Time management, study skills, organizational ability	4	4.0
Weak academic skills	4	3.0
Financial	3	4.7
Poor teacher/student interaction	3	3.0
Part-time jobs	2	3.0
Lack of confidence	2	2.0
Strike-related	1	1.0
Personal problems	1	5.0

Note. The results are based on responses from eight Seneca second-year students who each identified five major attrition factors and ranked them on a scale of 1 to 5, with one being the most significant and five the least.

Both faculty and students most often identified lack of focus as a major cause of student attrition. All faculty considered both lack of focus and weak academic skills to be major causes of attrition but ranked weak academic skills as being more significant. Lack of focus was identified most frequently (six out of eight) by students as a major cause of attrition. However, study habits (i.e., time management, study skills, organizational ability) and financial factors were ranked higher in terms of significance. Also of particular interest is the frequency with which faculty identified poor teacher/student interaction as a cause of attrition (six out of ten) while only three out of eight students cited it as a factor.

Tables 4 and 5 present the intervention strategies suggested by faculty and students during the interviews. These strategies are organized under the headings used for the causes of attrition presented in Tables 2 and 3.

Table 4

Intervention Strategies Suggested by Faculty

Lack of career/program focus
- orientation course
- interview students prior to enrollment
- school/college articulation
- student advisement program

Weak academic skills
- academic assessment and foundation studies
- school/college articulation
- provide academic support and tutorials
- provide streaming within program rather than front-loading
- provide more "help" centres - ESL, Math

Poor teacher/student interaction
- enhanced professional development for faculty
- student feedback should be an essential part of evaluation
- greater awareness for faculty of student services
- more collaboration among teachers teaching the same course
- increase student/teacher interaction outside the classroom
- hiring practices with emphasis on teacher training

Transition from high school
- orientation course for all first semester students
- faculty advisement program

Personal problems
- increased visibility of and access to counselling services

Time management, study skills, organizational ability
- build into first semester orientation course
- should be integrated into core subjects

Part-time jobs
- early counselling re possible effects of long part-time hours

Lack of self-confidence
- build self-awareness component into first semester

Financial
- allow students to take a partial load
- provide bursaries
- provide part-time work opportunities at college
- improve access to financial aid

Table 5

Intervention Strategies Suggested by Students

Lack of career/program focus
- provide more career counselling
- provide faculty advisors
- school/college articulation
- provide co-op opportunities
- show relevance of course for students

Transition from high school
- provide tutorial hours - one-on-one with faculty
- faculty attitude is important
- provide an orientation course in first semester
- early diagnosis to identify student needs
- don't force students; they often just need to mature

Weak academic skills
- provide developmental courses - English, Math
- provide support for academic skills (e.g., tutorial hours)

Time management, study skills, organizational ability
- integrate techniques into core courses
- build into timetable - first two to three weeks
- provide through orientation course

Financial
- provide increased access to financial support
- provide on-campus work opportunities
- provide more scholarships and bursaries based on financial need (don't discriminate against foreign students)

Poor teacher/student interaction
- improve faculty attitude towards students who need help
- provide a student advisement program

Part-time jobs
- counsel re consequences of long hours of work
- provide time management training

Lack of confidence
- develop student confidence through orientation course

Lack of integration
- provide Psychology course for first semester students
- provide a student advisement program

Personal problems
- increase self-awareness through Psychology course
- provide personal counselling

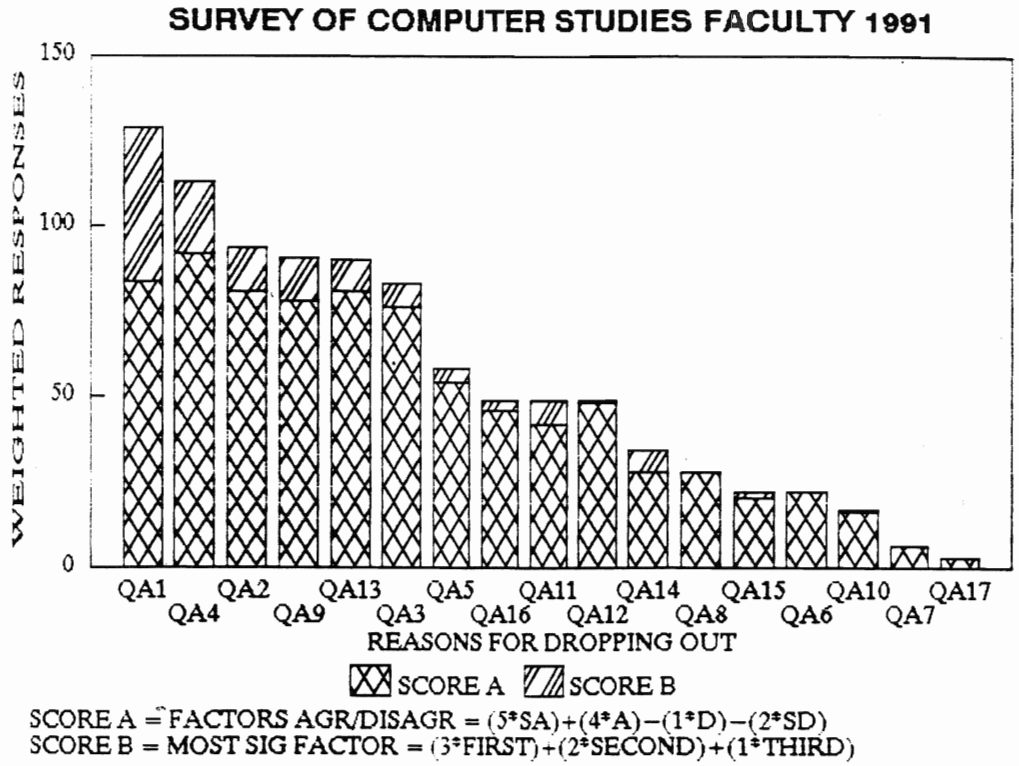
Both the faculty and student groups identified faculty as the key people in terms of improving student success. A student advisement program to increase student and faculty contact outside of the classroom was identified by both groups as a strategy for improving student success. There was strong support from both groups to have a first semester orientation course similar to the PSY 585 course currently offered at Seneca. School/college articulation was identified by both the faculty and student groups as a means to help students focus in high school prior to selecting a college program. Providing developmental courses was identified by both faculty and students as the most effective way to address the weak academic skills problem.

Although the importance and value of the study skills/ time management type of workshops offered by the Seneca Counselling Department were recognized by both students and faculty, both groups believed that the students who attend these workshops are not always the ones who need help the most. Suggested strategies for addressing this area of need included the integration of these skills into the first semester orientation course and/or other core subjects.

Faculty and Student Questionnaires

The detailed results of the questionnaires (see Appendices B and C) completed by 23 faculty and 131 students from the School of Computer Studies are contained in Appendix W.

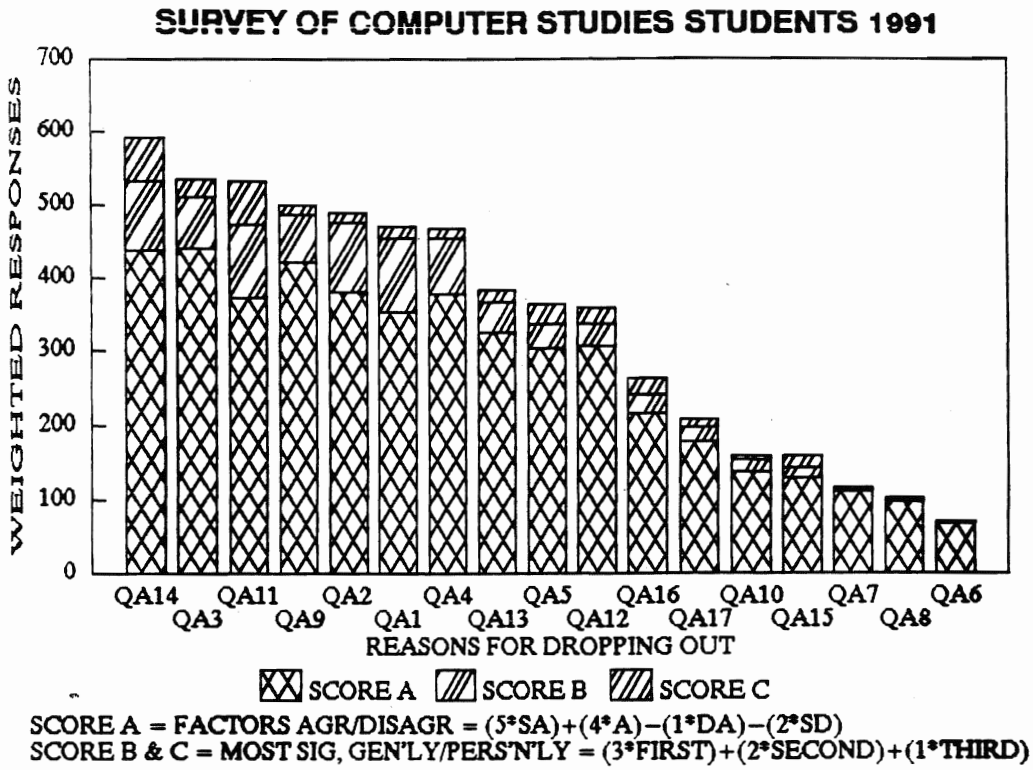
The data from the faculty and student questionnaires related to factors contributing to student dropout were weighted and integrated and are represented in bar graph form in Figures 4, 5, and 6.



Note.

QA1 = weak academic skills
QA2 = lack of goal commitment
QA3 = shift in goal commitment
QA4 = weak study habits
QA5 = personal problems
QA6 = lack of day care
QA7 = lack affordable housing
QA8 = transportation/commute
QA9 = lack academic integration
QA10 = lack social integr'n
QA11 = financial reasons
QA12 = lack self-confidence
QA13 = excessive pt work hrs
QA14 = poor stud/tchr interaction
QA15 = course/program boring
QA16 = course/program irrelevant
QA17 = poor timetable

Figure 4. Reasons for students dropping out: faculty.



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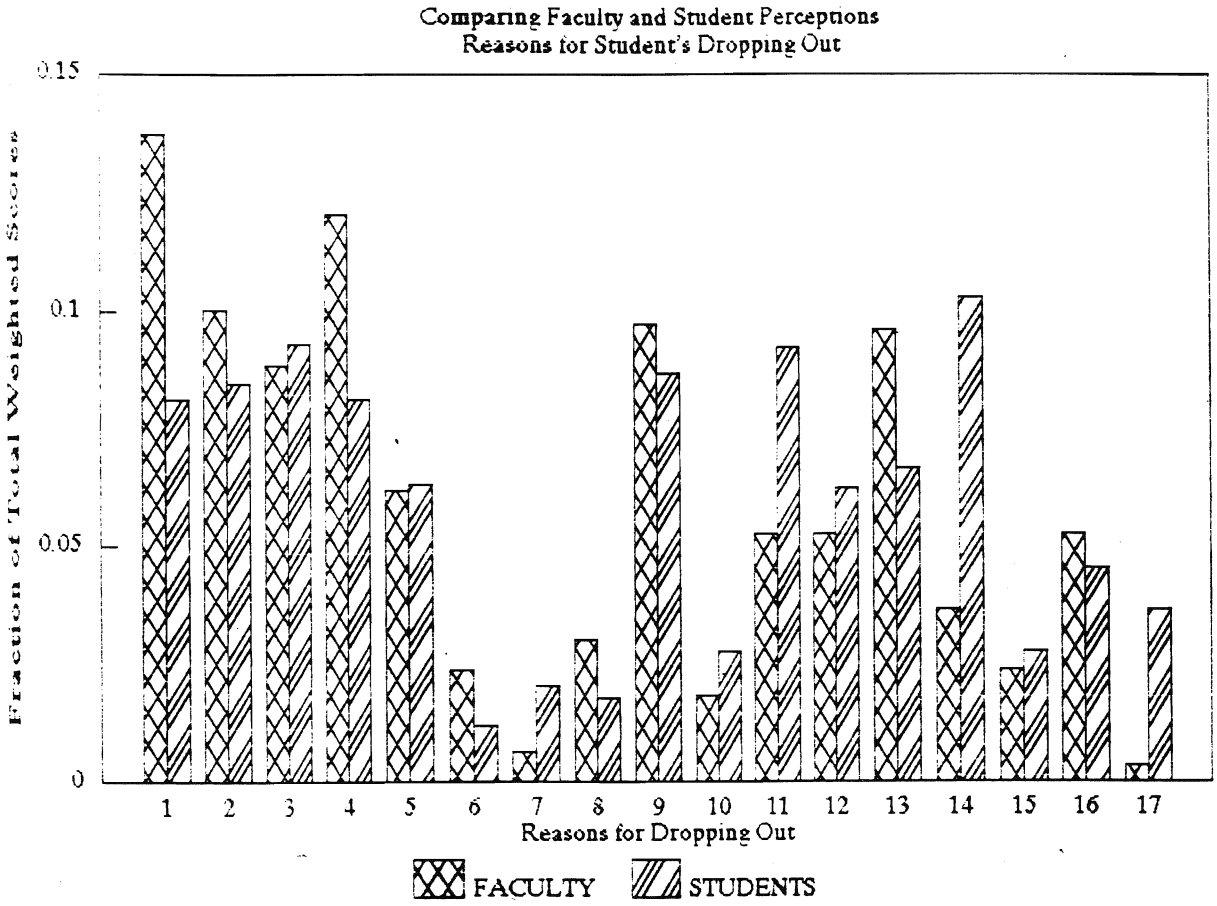
QA11 = financial reasons
QA12 = lack self-confidence
QA13 = excessive pt work hrs
QA14 = poor stud/tchr interaction
QA15 = course/program boring
QA16 = course/program irrelevant
QA17 = poor timetable

Figure 5. Reasons for students dropping out: students.



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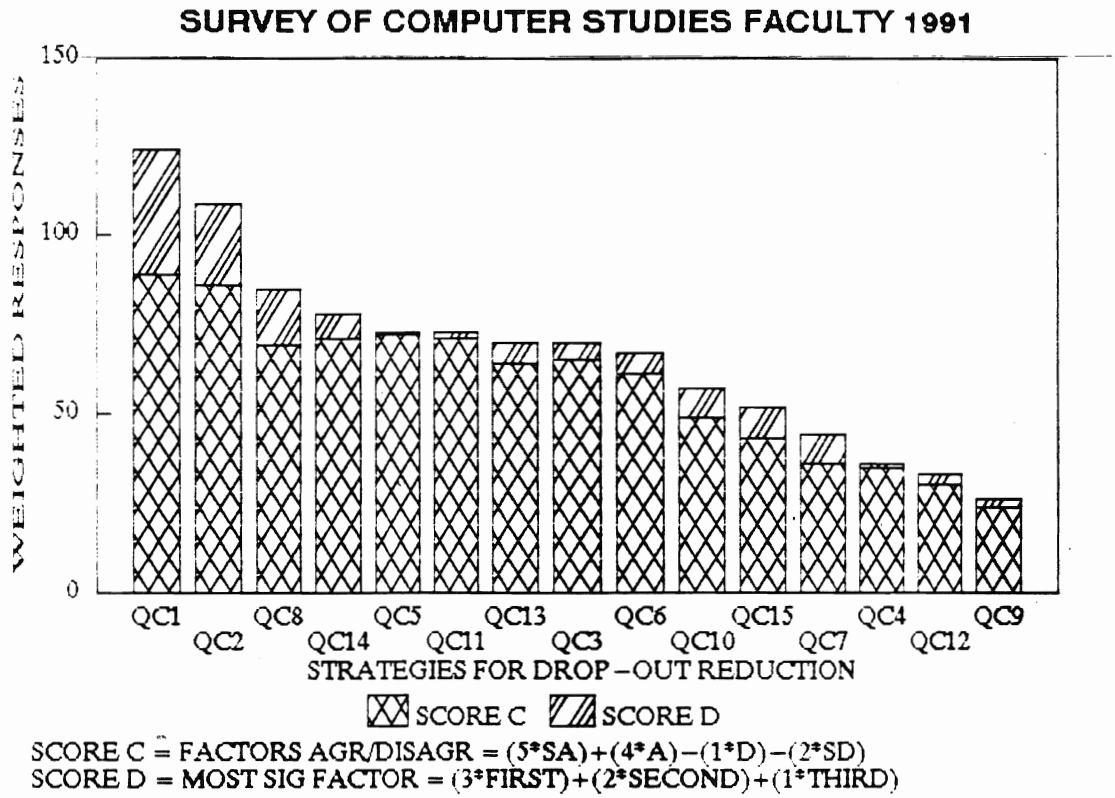
QA14 = poor stud/tchr interaction
QA15 = course/program boring
QA16 = course/program irrelevant
QA17 = poor timetable

Figure 6. Reasons for students dropping out: faculty and students.

By comparing the faculty and student responses, there appeared to be substantial agreement as to the ranking of the causes of attrition with two exceptions. The most significant attrition factor identified by faculty was QA1 "weak academic skills" (e.g., literacy, numeracy, problem-solving). While students found this factor to be significant enough to rank it as the sixth most important, there was a gap between faculty and student perceptions as to its importance. The most significant attrition factor identified by students was QA14 "poor teacher/student interaction" (i.e., individual needs of students are not met within the classroom setting) while this factor was ranked 11th by faculty. There appeared to be a significant gap in perceptions between faculty and students in terms of their interaction with one another. Lack of or shift in goal commitment, personal problems, and lack of academic integration were identified as significant factors by both faculty and students. Financial reasons was ranked as a more significant factor by students than by faculty. There appeared to be substantial agreement between faculty and students as to the least significant factors, although "scheduling problems" (i.e., poor timetable) was seen to be less significant by faculty than by students.

The data from the faculty and student questionnaires related to strategies for reducing student dropout were

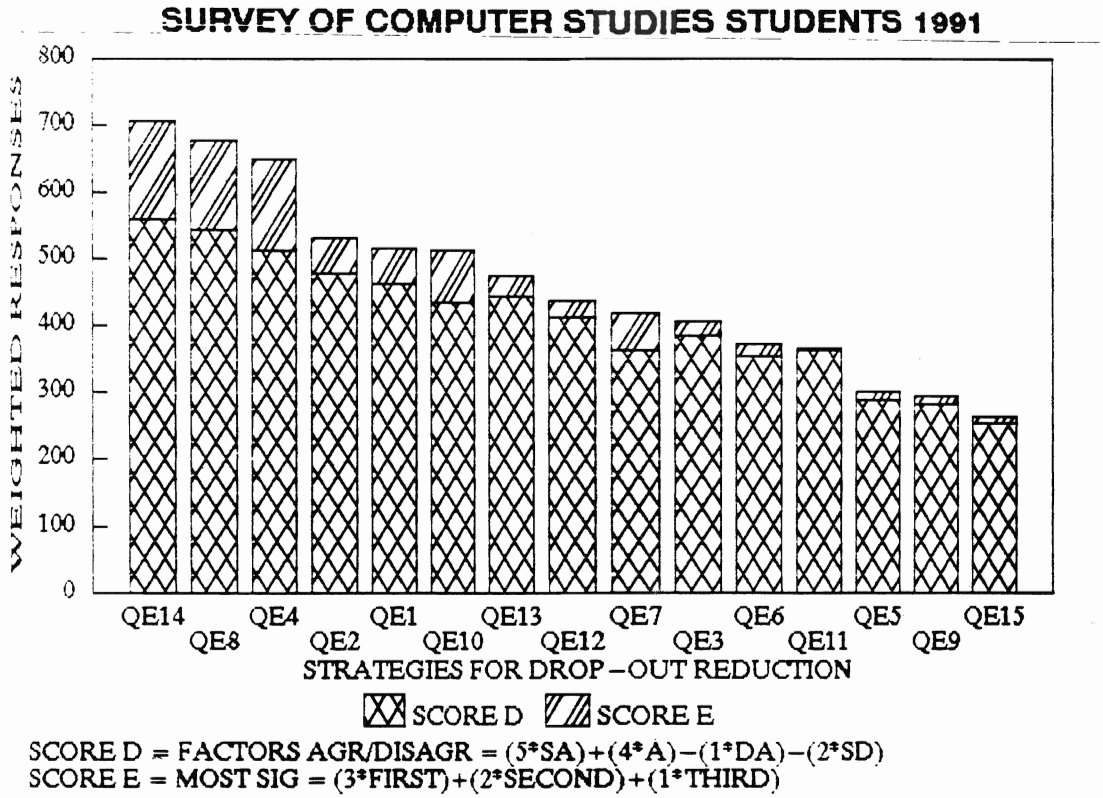
weighted and integrated and are represented in bar graph form in Figures 7, 8, and 9.



Note.

QC/QE1 = provide acad skills assm't
QC/QE2 = provide career counselling
QC/QE3 = provide advisement
QC/QE4 = improve stud/tchr inter'n
QC/QE5 = mandatory orientation
QC/QE6 = integrated tracking system
QC/QE7 = study skills in courses
QC/QE8 = tutorials/learning centres
QC/QE 9 = social activities access
QC/QE10 = financial aid access
QC/QE11 = personal counsel access
QC/QE12 = more campus pt work access
QC/QE13 = crse/tchr eval/feedback
QC/QE14 = improve teacher skills
QC/QE15 = student-centred culture

Figure 7. Strategies for reducing dropout: faculty.



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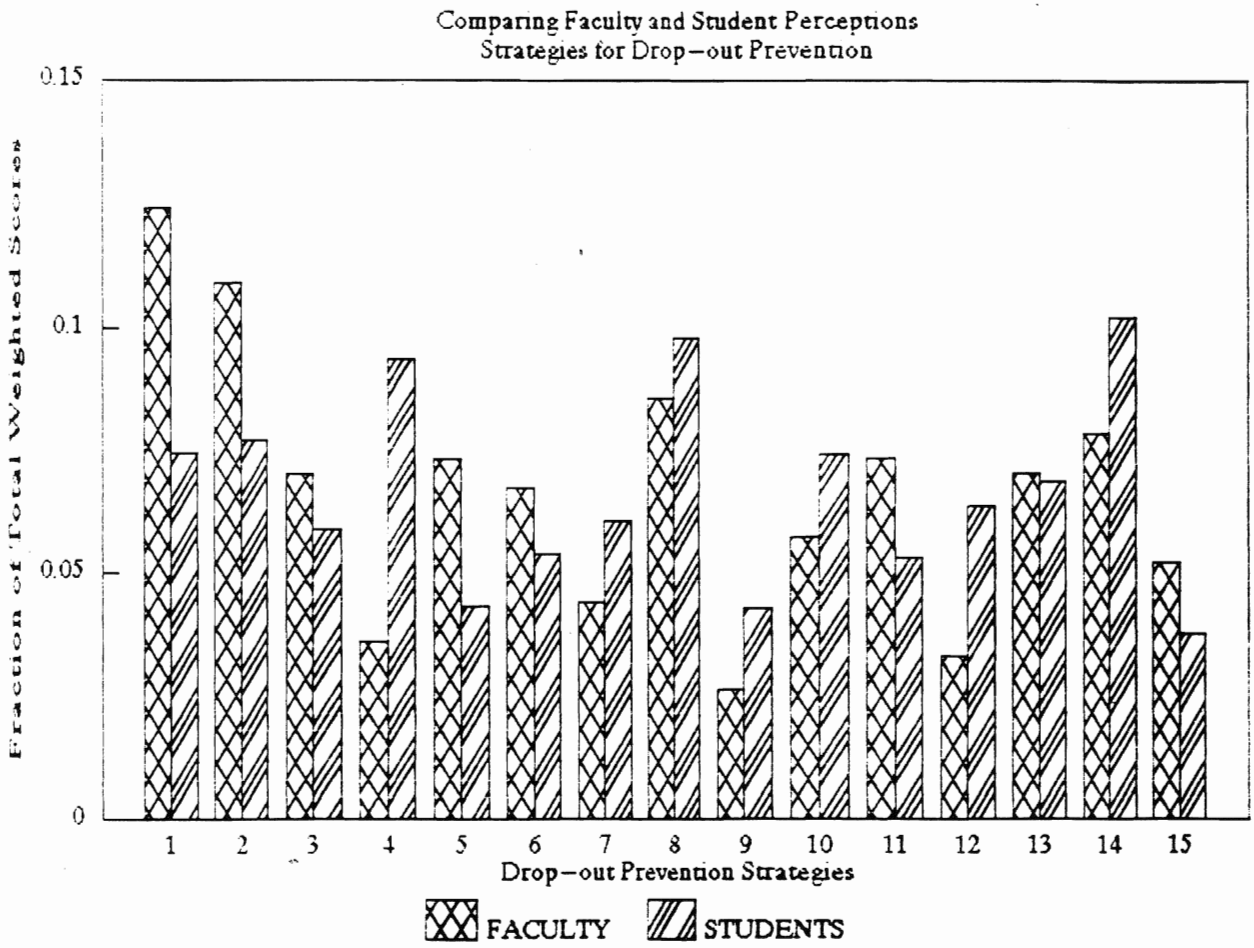
QC/QE12 = more campus pt work access
QC/QE13 = crse/tchr eval/feedback
QC/QE14 = improve teacher skills
QC/QE15 = student-centred culture

Figure 8. Strategies for reducing dropout: students.



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QC/QE13 = crse/tchr eval/feedback
QC/QE14 = improve teacher skills
QC/QE15 = student-centred culture

Figure 9. Strategies for reducing dropout: faculty and students.

By comparing the faculty and student responses, there appeared to be general agreement on the significance of strategies such as an advisement program, an integrated tracking system, tutorials and learning centres, financial aid access, course/teacher evaluation and student feedback, and a student-centred culture. However, similar to the discrepancy reported above between faculty and student responses related to weak academic skills and poor student/teacher interaction, there appeared to be a significant gap between faculty and student perceptions of the need to provide academic skills assessment and the need to improve the quality of teacher/student interaction in the classroom. It was interesting to note that while faculty ranked "enhance faculty teaching skills and techniques" as a significant strategy, they ranked "improve the quality of teacher/student interaction in the classroom" as one of the least significant strategies. Both of these strategies were perceived by students to be extremely important to reducing student dropout. It was somewhat encouraging to note that both faculty and students ranked "provide for ongoing course evaluation and modification which includes student feedback" as the seventh most important strategy. Increasing on campus part-time jobs was ranked as more significant by students than by faculty, as was the need to increase access to financial aid, scholarships and bursaries. This finding correlated with the results of the first part of the

questionnaire related to reasons for dropout where students ranked financial reasons as significantly more important than did faculty. Although faculty ranked "weak personal study habits" as the second most significant reason for dropout, they did not consider the integration of time management, note taking, and study skills techniques into individual college courses as important to dropout reduction, ranking this strategy 12th out of 15.

By referring to the summary of the open-ended comments contained in Appendix W, the reader will see that, in all cases, the comments most frequently made by students were teacher-related. This supports the findings reported in the graphs containing student responses. Similarly, the faculty comments support their perception of the need for academic assessment and foundation studies.

Phase 2: Early Identification

For purposes of early identification of "at risk" students, two diagnostic instruments were completed during this phase as shown in Table 6.

Table 6

Students Completing Diagnostic Instruments

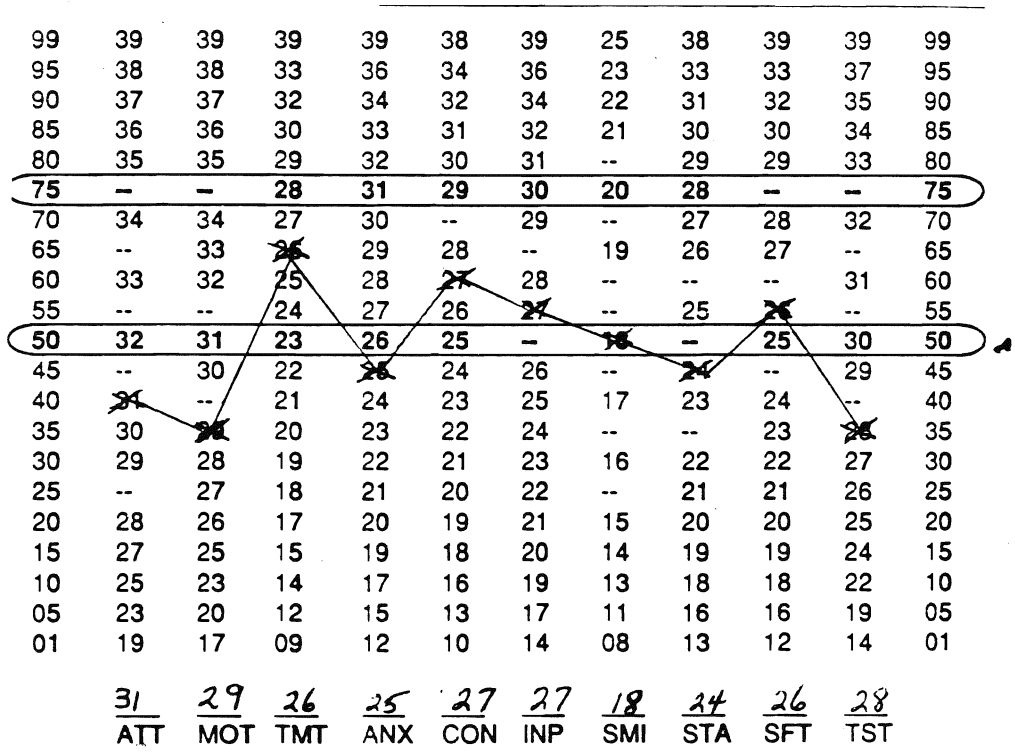
Instrument	# of Students
CSI only	91
LASSI only	140
CSI and LASSI	88
Total Sample	319

Noel/Levitz College Student Inventory (CSI)

Individual student reports (see Appendix P), advisor reports (see Appendix Q), and summary reports (see Appendix R) were generated as a result of the computer analysis completed by the publisher of this instrument. The findings shown in Appendix R indicated that the sample population under study here had higher levels of Dropout Proneness (64.4th percentile), Predicted Academic Difficulty (52.4th percentile), Educational Stress (67th percentile), and Receptivity to Institutional Help (60.9th percentile) than the American national norms established for this instrument. While these statistics might vary if the results were compared to local norms for Seneca or the School of Computer Studies, it appeared that a significant number of the sample population were identified as being "at risk." The high levels of dropout proneness and receptivity to institutional help support the potential for an early identification and intervention model of student retention.

Learning and Study Strategies Inventory (LASSI)

Self-scoring of the LASSI by the sample population resulted in individual student reports representing scores on ten different scales. Appendix S contains a sample class summary of student scores which was computed to permit students to compare their individual scores with the class average. Figure 10 shows the mean of all student scores for each of the ten scales.



99	39	39	39	39	38	39	25	38	39	39	99
95	38	38	33	36	34	36	23	33	33	37	95
90	37	37	32	34	32	34	22	31	32	35	90
85	36	36	30	33	31	32	21	30	30	34	85
80	35	35	29	32	30	31	--	29	29	33	80
75	**--**	**--**	**28**	**31**	**29**	**30**	**20**	**28**	**--**	**--**	**75**
70	34	34	27	30	--	29	--	27	28	32	70
65	--	33	26	29	28	--	19	26	27	--	65
60	33	32	25	28	27	28	--	--	--	31	60
55	--	--	24	27	26	27	--	25	26	--	55
50	**32**	**31**	**23**	**26**	**25**	**--**	**16**	**--**	**25**	**30**	**50**
45	--	30	22	25	24	26	--	24	--	29	45
40	31	--	21	24	23	25	17	23	24	--	40
35	30	28	20	23	22	24	--	--	23	28	35
30	29	28	19	22	21	23	16	22	22	27	30
25	--	27	18	21	20	22	--	21	21	26	25
20	28	26	17	20	19	21	15	20	20	25	20
15	27	25	15	19	18	20	14	19	19	24	15
10	25	23	14	17	16	19	13	18	18	22	10
05	23	20	12	15	13	17	11	16	16	19	05
01	19	17	09	12	10	14	08	13	12	14	01
	31	29	26	25	27	27	18	24	26	28	
	ATT	MOT	TMT	ANX	CON	INP	SMI	STA	SFT	TST	

Note.

ATT = Attitude — ANX = Anxiety

SMI = Selecting Main Ideas — MOT = Motivation

CON = Concentration — STA = Study Aids

TMT = Time Management — INP = Information Processing

SFT = Self Testing — TST = Test Strategies

Figure 10. Learning and Study Strategies Inventory (LASSI) Mean of student scores.

By comparing these results to the American norms established for this instrument, it appeared that the sample population had lower scores on the scales of Attitude (40th percentile), Motivation (35th percentile), Use of Support Techniques and Materials (45th percentile), and Test Strategies and Preparing for Tests (35th percentile). The student group under study here appeared to be less anxious (45th percentile) than the norm and had a higher concentration level (60th percentile). The highest mean score was for the Time Management Scale (65th percentile).

Phase 3: Intervention

A total of 13 Individualized Advisement Session forms (see Appendix F) were completed during this research phase, seven of which were completed by one of the PSY 585 professors, four by another PSY 585 professor, and two by a campus counsellor. All but one of the sessions was student initiated. Reasons for consultation included lack of academic motivation, personal problems, academic problems, language problems, and study skill problems. Only in the case of the two students seen by the counsellor was there any indication that these advisement sessions were initiated directly as a result of the preliminary interventions undertaken during this research phase. Advice was given and/or referrals were made by the PSY professors or counsellor where appropriate.

Phase 4: Evaluation

In order to address the research question -

- **What is the process of first semester student attrition, including rate, timing, and causes?**

the sample population was tracked for the period beginning Day 10 of Semester 1 (Fall '91) until Day 10 of Semester 2 (Spring '92).

Table 7 shows the five categories of students identified in this phase based on enrollment status as of Day 10 of the Spring 1992 semester.

Table 7

Student Enrollment Status - Day 10, Semester 2

Category	# of Students	% of Sample
Successful Persisters	183	57.4
Successful Persisters - Weak	56	17.5
Successful Withdrawals	4	1.2
Unsuccessful Persisters	42	13.2
Unsuccessful Withdrawals	34	10.7
Total	319	100%

Using enrollment as a measure of success, it appeared that 239 students (74.9% of the total sample) can be classified as successful persisters (i.e., they were enrolled in second semester at the School of Computer Studies). However, it was important to note that 56 of these students (17.5% of the total sample) successfully completed three or less of the five credits undertaken in the first semester. These students could be considered "at risk" and they should continue to be tracked for the duration of their enrollment. The unsuccessful persisters, representing 42 students or 13.2% of the total sample, were unsuccessful in first semester Computer Studies but were either re-enrolled in first semester Computer Studies or elsewhere at Seneca. For purposes of this study, it appeared that 136 students or 42.6% of the total sample experienced academic difficulty or dropped out during or at the end of the first semester. When considering only those students who are no longer enrolled at Seneca, the attrition rate was 11.9%.

Table 8 shows the timing and reasons for the 38 student withdrawals for the two categories (i.e., successful withdrawals and unsuccessful withdrawals).

Table 8

Timing of and Reasons for Student Withdrawal

Timing of Student Withdrawal	# of Students	% of Withdrawals
Withdrew between 10th day and last 2 months of classes	15	39.5
Promotion Meeting Directive (mandatory withdrawal)	19	50.0
Voluntary Successful Withdrawals (students who successfully completed first semester but chose to withdraw)	4	10.5
Total	38	100%

Reasons for Student Withdrawal		
Reason not stated	11	29.0
Lack of financial resources	1	2.6
Change in career objectives	4	10.5
Transfer to another post-secondary institution	1	2.6
Personal problems (eg. illness)	1	2.6
Academic difficulties	20	52.7
Total	38	100%

The findings presented in the above table indicate that the majority of the withdrawals (i.e., 50% of the total withdrawals) left at the end of first semester as a result of a promotion meeting directive. The second largest group (39.5% of the total sample) left between the 10th day and last two months of classes, with the remaining 10.5% of the sample population being voluntary successful withdrawals. While a significant number of withdrawals (i.e., 29% of the total sample) did not give a reason for withdrawal, it appears from the above table that the majority (i.e., 52.7% of the total sample) withdrew for academic reasons. No reason for withdrawal was given by two of the successful withdrawals, while one cited personal problems as the reason and the another indicated that transfer to another post-secondary institution was the reason.

In order to address the research question -

- **How useful is a diagnostic instrument in identifying students at risk of dropping out in first semester?**

the sample population was tracked for the period beginning Day 10 of Semester 1 (Fall '91) until Day 10 of Semester 2 (Spring '92) for purposes of evaluating the usefulness of the two diagnostic instruments utilized in this study. As well, four PSY 585 professors, two counsellors, the Dean, Chair and First-Year Coordinator of Computer Studies were interviewed in order to gather their perceptions of the

usefulness of the two diagnostic instruments and the preliminary interventions undertaken in Phases 2 and 3. In order to gather student perceptions of the usefulness of the instruments and the interventions, a similar interview was conducted with a focus group of eight students.

Noel/Levitz College Student Inventory (CSI)

Figure 11 shows the frequency distribution of student scores on the Dropout Proneness scale for this instrument. This summary score was expressed on a stanine scale with 9 being very high, 5 being average, and 1 being very low.

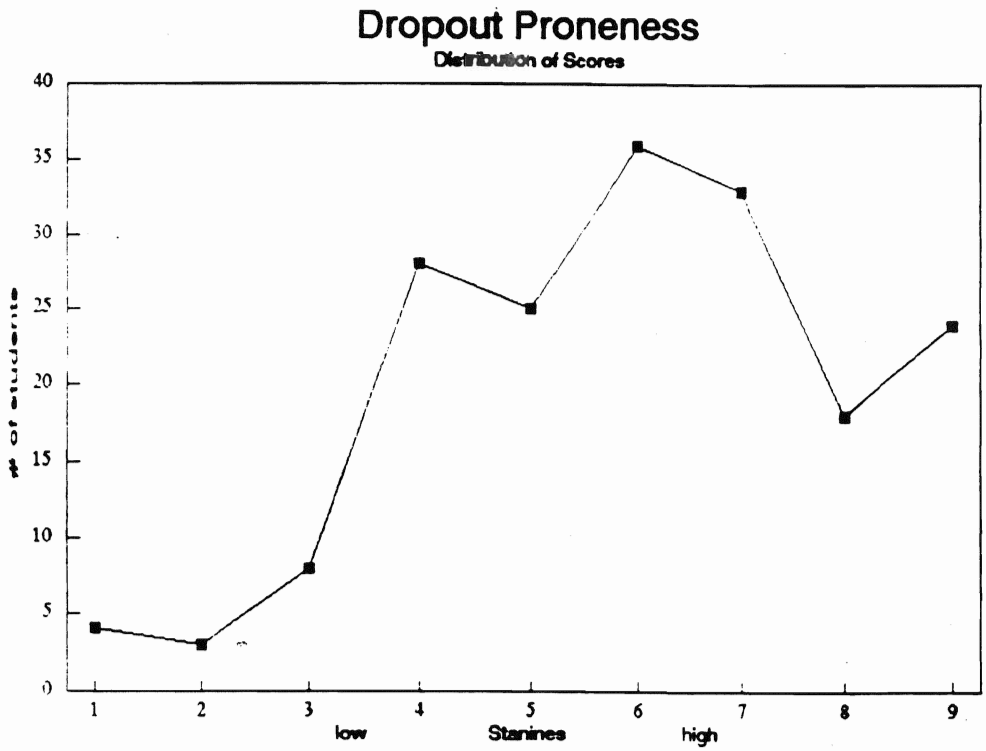


Figure 11. Frequency distributions for CSI Dropout Proneness.

The distribution of scores shown on the above graph indicates that the sample population in this study differed from the normative sample. As a result, the relationship between the CSI findings and actual student enrollment behaviour may not be as strong as if local norms had been established for the *School of Computer Studies*.

Table 9 presents the findings in terms of frequency distributions among the five categories of students in relation to the Dropout Proneness scale of this instrument. Table 10 contains a summary of the cross-tabulation between the CSI Dropout Proneness scores and student enrollment status.

Table 9

Frequency Distributions for CSI Dropout Proneness Related to Enrollment Status

DP	No. of Students	SP	SPW	SW	UP	UW
9	24	7	7	0	3	7
8	18	10	2	0	5	1
7	33	18	4	1	4	6
6	36	24	4	1	4	3
Totals	111	59	17	2	16	17
5	25	15	4	0	4	2
4	28	22	4	0	1	1
3	8	3	4	0	0	1
2	3	2	1	0	0	0
1	4	4	0	0	0	0
Totals	68	46	13	0	5	4

Note.

DP = Dropout Proneness summary score is expressed on a stanine scale (i.e., 9 is very high, 5 is average, 1 is very low)
SP = Successful Persisters
SPW = Successful Persisters - Weak (3 or less of 5 credits completed)
SW = Successful Withdrawals
UP = Unsuccessful Persisters
UW = Unsuccessful Withdrawals

Table 10

Cross-Tabulation Summary between CSI Dropout Proneness Scores and Enrollment Status

Enrollment Status	DP 6-9	DP 1-5	Total
Students at risk (SPW, SW, UP, UW)	52 (46.8%)	22 (32.4%)	74 (41.3%)
Students not at risk (SP)	59 (53.2%)	46 (67.6%)	105 (58.7%)
Totals	111 (100%)	68 (100%)	179 (100%)

Note.

DP = Dropout Proneness summary score is expressed on a stanine scale (i.e., 9 is very high, 5 is average, 1 is very low)
SP = Successful Persisters
SPW = Successful Persisters - Weak (3 or less of 5 credits completed)
SW = Successful Withdrawals
UP = Unsuccessful Persisters
UW = Unsuccessful Withdrawals

The diagnostic accuracy of the CSI for identifying students at risk in the first semester can be described by examining the results shown in Tables 9 and 10. On the basis that a Dropout Proneness score of 6 or higher suggests a risk factor that warrants intervention, and as presented in Table 9, 111 students (62% of total sample) were identified by the CSI as being at risk. By comparing the Dropout Proneness scores of 6 to 9 inclusive to the enrollment status categories, and as presented in Table 10, it appeared that 52 of the 111 students (46.8%) actually exhibited "at risk" behaviour. However, 22 students (32.4%) identified by the CSI as low risk also exhibited "at risk" behaviour. By comparing the Dropout Proneness scores of 1 to 5 inclusive (i.e., 68 students) to the enrollment status categories, it appeared that 46 students (67.6%) were accurately diagnosed with a lower level risk factor. However, 59 students (53.2%) identified by the CSI as high risk did not exhibit "at risk" behaviour.

The relationship between the results of the CSI and actual student enrollment behaviour suggests only a modest gain in identification of "at risk" students for intervention purposes through the use of this diagnostic instrument.

Figure 12 shows the frequency distribution of student scores on the Receptivity to Institutional Help scale of this instrument. This summary score was based on how

strongly the student expressed the desire for help in a wide variety of areas, such as career counselling, personal counselling, social enrichment, and academic assistance. The higher the score, the more receptive the student was to help. Students' willingness to receive assistance to succeed is an important factor to consider in any intervention model of student retention.

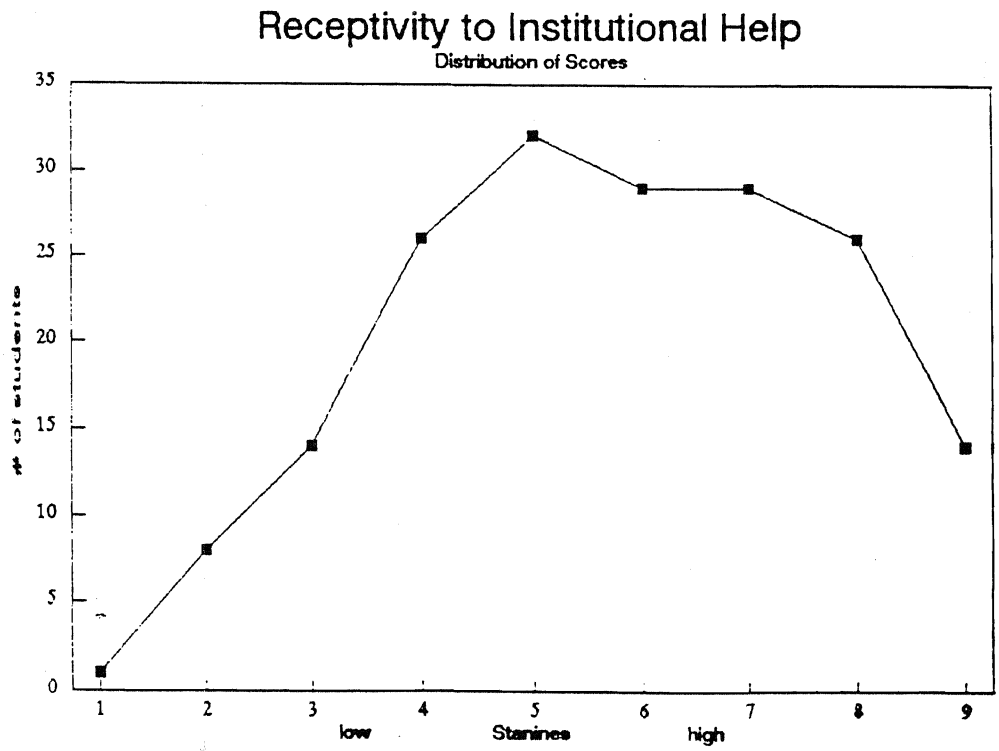


Figure 12. Frequency distributions for CSI Receptivity to Institutional Help.

The above graph shows a normal distribution of scores suggesting that the sample population closely resembled the normative sample with respect to this specific measure.

Table 11 presents the findings in terms of frequency distributions among the five categories of students in relation to the Receptivity to Institutional Help scale of this instrument.

Table 11

Frequency Distributions for CSI Receptivity to Institutional Help Related to Enrollment Status

RH	No. of Students	SP	SPW	SW	UP	UW
9	14	5	5	1	2	1
8	26	16	6	0	2	2
7	29	16	4	0	5	4
6	29	17	8	0	3	1
Totals	98	54	23	1	12	8
5	32	18	4	0	1	9
4	26	19	4	1	2	0
3	14	10	3	0	1	0
2	8	6	1	0	0	0
1	1	1	0	0	0	0
Totals	81	55	12	1	4	9

Note.

RH = Receptivity to Institutional Help summary score is expressed on a stanine scale (i.e., 9 is very high, 5 is average, 1 is very low)
SP = Successful Persisters
SPW = Successful Persisters - Weak (3 or less of 5 credits completed)
SW = Successful Withdrawals
UP = Unsuccessful Persisters
UW = Unsuccessful Withdrawals

Those most receptive to institutional help (i.e., RH scores of 6 to 9 inclusive) represented 98 students or 54.8% of the sample population. By comparing the RH scores to the enrollment status categories shown in the above table, it appeared that 89 of the 98 students (90.8%) persisted (i.e., are still enrolled at Seneca). Of the 81 students diagnosed as being low in RH (i.e., RH scores of 1 to 5 inclusive), 10 students (12.3%) actually withdrew. It was important to consider, however, that low scores in receptivity to institutional help were not necessarily negative. Low risk students may not require or desire institutional help and may, therefore, respond in such a way as to indicate low receptivity.

Learning and Study Strategies Inventory (LASSI)

Table 12 contains a summary of the LASSI percentiles for the unsuccessful withdrawals and the successful withdrawals who had completed this instrument. Student GPAs and CSI Dropout Proneness scores, if students completed the CSI, were also included in this table in order to examine the relationship among these variables.

Table 12

Summary of LASSI Percentiles for Unsuccessful Withdrawals and Successful Withdrawals

Unsuccessful Withdrawals	ATT	MOT	TMT	ANX	CON	INP	SMI	STA	SFT	TST	GPA	DP
Student A	40	50	75	50	20	45	20	65	50	1	.0	9
Student B	40	5	40	10	1	1	1	1	0	1	.3	9
Student C	1	10	15	35	10	25	20	15	5	10	.0	8
Student D	5	25	35	10	5	55	20	5	30	5	.8	7
Student E	5	35	55	5	80	95	90	90	95	45	.0	7
Student F	10	15	60	30	45	20	75	20	50	60	1.0	6
Student G	40	90	85	10	90	99	75	99	99	20	.4	5
Student H	80	99	90	40	95	30	90	45	65	80	.3	4
Student I	90	80	85	65	95	90	75	45	95	45	.5	n/a
Student J	30	15	15	65	50	75	40	65	40	60	.0	n/a
Student K	60	70	95	1	75	95	5	75	95	1	1.0	n/a
Student L	5	10	20	15	40	35	40	25	10	60	.0	n/a
Student M	30	5	65	20	60	85	50	90	85	10	.0	n/a
Student N	10	15	40	75	45	45	40	40	40	25	1.2	n/a
Student O	15	45	80	85	45	85	65	90	65	50	.6	n/a
Student P	99	80	90	50	99	90	95	70	95	90	.6	n/a
Student Q	85	30	25	40	95	80	1	45	20	1	1.4	n/a
Student R	30	10	15	1	20	15	75	40	25	10	.7	n/a
Successful Withdrawals	ATT	MOT	TMT	ANX	CON	INP	SMI	STA	SFT	TST	GPA	DP
Student S	40	5	35	45	25	5	20	5	20	10	3.3	7
Student T	5	25	50	10	15	55	65	90	85	10	3.8	n/a
Student U	80	50	85	5	90	75	30	90	85	1	3.2	n/a

Note.

ATT = Attitude
MOT = Motivation
TMT = Time Management
TST = Test Strategies
ANX = Anxiety
CON = Concentration
INP = Information Processing
GPA = Grade Point Average
SMI = Selecting Main Ideas
STA = Study Aids
SFT = Self Testing
DP = Dropout Proneness

On the basis that student scores falling in the 50th percentile or less indicated a risk factor, it appeared from the above table that the Attitude (ATT), Motivation (MOT), and Test Strategies (TST) scales had the highest degree of relationship with student withdrawal behaviour. For all three of these scales, six or less of the 21 students scored above the 50th percentile. The reader's attention is drawn to the fact that the percentiles for the Anxiety (ANX) scale represent high or low levels of anxiety (i.e., only four students with scores above the 50th percentile appeared to be highly anxious about their chances of success). There did not appear to be much difference between the scores of the successful withdrawals and unsuccessful withdrawals. For the successful withdrawals, scores were particularly low for the ATT, MOT, and TST scales, which was similar to the findings for the unsuccessful withdrawals.

By comparing the LASSI percentiles with the Dropout Proneness scores of the CSI, there appeared to be a high degree of relationship. For example, Students B and C have LASSI scores below the 50th percentile for all scales, as well as Dropout Proneness scores of 9 and 8 respectively. Students G and H have only three LASSI scores below the 50th percentile, as well as Dropout Proneness scores of 5 and 4 respectively. Student S was the only successful withdrawal who completed both the CSI and the LASSI, with a score of 7

in Dropout Proneness and scores below the 50th percentile for all LASSI scales.

Table 13 contains a summary of the LASSI percentiles for the successful persisters and unsuccessful persisters who had completed both the CSI and the LASSI. Student GPAs and Dropout Proneness scores from the CSI were also included in this table in order to examine the relationship among these variables.

Table 13

Summary of LASSI Percentiles for Successful Persisters and Unsuccessful Persisters

Successful Persisters	ATT	MOT	TMT	ANX	CON	INP	SMI	STA	SFT	TST	GPA	DP
Student AA	50	25	40	25	35	20	50	5	20	45	2.8	9
Student BB	5	5	25	5	10	1	10	40	10	5	2.8	9
Student CC	1	1	55	50	35	1	5	1	1	15	2.7	8
Student DD	20	10	60	15	10	5	20	10	65	5	2.2	8
Student EE	30	25	75	40	55	60	20	40	35	20	3.3	8
Student FF	80	35	70	95	60	90	40	25	65	70	3.5	7
Student GG	35	35	65	25	40	35	65	75	65	20	2.3	7
Student HH	85	45	50	5	60	95	20	65	85	10	3.0	6
Student II	70	50	35	15	25	35	5	30	35	20	4.0	6
Student JJ	90	85	90	75	90	60	95	90	85	60	2.8	5
Student KK	80	60	70	80	35	45	90	85	70	90	3.0	5
Student LL	85	99	55	75	85	85	99	85	30	90	2.5	4
Student MM	50	65	85	80	90	85	99	55	25	90	3.3	4
Student NN	99	65	85	45	85	80	75	75	95	60	2.5	3
Student OO	30	45	85	40	80	80	85	75	95	80	1.8	1
Student PP	99	35	60	85	60	20	90	55	40	70	2.5	1

Unsuccessful Persisters	ATT	MOT	TMT	ANX	CON	INP	SMI	STA	SFT	TST	GPA	DP
Student QQ	50	65	95	1	40	80	65	95	99	35	.6	9
Student RR	15	30	55	20	65	15	5	65	20	5	.2	9
Student SS	99	35	50	5	1	95	65	75	95	5	1.2	8
Student TT	1	0	30	5	10	1	0	15	1	1	1.2	7
Student UU	80	35	90	40	30	70	65	15	55	70	.0	7
Student VV	30	90	55	30	25	80	10	25	95	45	1.8	6
Student WW	40	70	85	55	95	75	50	30	50	80	.3	5

Note.

ATT = Attitude
MOT = Motivation
TMT = Time Management
TST = Test Strategies
ANX = Anxiety
CON = Concentration
INP = Information Processing
GPA = Grade Point Average
SMI = Selecting Main Ideas
STA = Study Aids
SFT = Self Testing
DP = Dropout Proneness

Unlike the results presented in Table 12, there did not appear to be any stability of patterns in the LASSI scores of the successful persisters. For example, one half of the sample shown in Table 13 had scores in the 50th percentile or less for both the Attitude (ATT) and the Test Strategies (TST) scales. Eleven of the 16 students had scores in the 50th percentile or less for the Motivation (MOT) scale. It appears from the results in Table 13 that there was little relationship between the LASSI scores and student persistence. However, similar to the findings presented in Table 12, there appeared to be a significant relationship between the LASSI scores and the CSI Dropout Proneness scores. For example, Students AA and BB had LASSI scores below the 50th percentile for all scales (except Anxiety), as well as a Dropout Proneness score of 9. Student NN had LASSI scores above the 50th percentile for all scales (except Anxiety), as well as a Dropout Proneness score of 1.

Similar to the findings presented in Table 12, there appeared to be a significant relationship between the LASSI scores for Attitude (ATT), Motivation (MOT), and Test Strategies (TST) and the enrollment behaviour of the unsuccessful persisters. Five of the seven unsuccessful persisters had scores in the 50th percentile or less for ATT and TST, and four had scores below the 50th percentile for MOT. The relationship between the LASSI scores and the Dropout Proneness scores for the unsuccessful persisters did

not appear to be very strong. For example, Student QQ had a Dropout Proneness score of 9 but only three scores at the 50th percentile or less.

Staff and Student Interviews

In order to address the research questions -

- **How useful is a diagnostic instrument in identifying students at risk of dropping out in first semester?**
- **Which intervention strategies might be the most effective in improving student retention in first semester?**

interviews were conducted with staff and first semester students at the School of Computer Studies. Appendix X contains a detailed summary of the results of the interviews related to staff and student perceptions of the usefulness of the diagnostic instruments and preliminary interventions.

The findings from these interviews support the concept of an early identification and intervention model of student retention. Generally, faculty, staff, and students supported a skills assessment approach which measures students' academic ability as well as attitude, motivation, commitment, and intent. Most indicated that this assessment should be done prior to enrollment and that appropriate counselling should be provided to students based on the results of the assessment. The findings were less clear with respect to the usefulness of the CSI and LASSI

diagnostic instruments. Most of those interviewed supported the idea of using a diagnostic instrument, but there was no evidence to indicate that either the CSI or LASSI was the best diagnostic instrument to use.

In assessing the impact of the preliminary interventions undertaken in Phase 3 of this research, the findings from the interviews indicated that there was very little evidence of usefulness. Very little action was taken by students as a result of the reports generated by the diagnostic instruments. The Schedule of Resources (see Appendix T) appeared to have been the most useful of the interventions.

The findings showed some support for a student advisement system within the School of Computer Studies. A gap in perceptions appeared to exist between faculty and counsellors in that some faculty perceived counsellors to be best for the role of advisor while the counsellors perceived faculty to be best for that role.

Chapter Summary

In this chapter, the findings from the four research phases have been reported in relation to the questions identified in Chapter One. Findings from the retrospective analysis of enrollment data and the faculty and student interviews and questionnaires completed in Phase 1 provided background information about the student attrition problem within the School of Computer Studies at Seneca, as well as

possible strategies for improving student retention. Weak academic skills and factors related to lack of goal commitment and weak study habits were identified by faculty to be the most significant causes of attrition. Students, far more than faculty, perceived the role of faculty to be of major significance to the failure or success of students. The synthesis of this data provides a basis for action towards improving student success within the School of Computer Studies.

The findings from Phase 2 provided a profile of the sample population based on the results of the two diagnostic instruments. Individual students were identified as potentially at risk of dropping out or experiencing academic difficulty. Phase 3 findings provided some insight into the action taken by students as a result of the preliminary interventions. It also appeared from the findings that very little action was taken as a result of the interventions.

The findings from the final phase of this research study further contribute to our understanding of the problem of student attrition, building on the background information gathered in Phase 1. By tracking the sample population, it was possible to describe the process of first semester student attrition, including rate, timing, and causes. The relationship between the enrollment status of the sample population and the results of the two diagnostic instruments was examined and described in order to determine the

usefulness of the instruments in identifying students at risk. The relationship between the results of the diagnostic instruments and the actual student enrollment behaviour appeared to be stronger for the CSI than the LASSI. The findings from staff and student interviews during this phase were described in an attempt to determine perceptions of the usefulness of the proposed early identification and intervention model of student retention. While staff and students appeared to support the concept of early identification and intervention, there was little evidence to support the usefulness of either one of the two diagnostic instruments used in this research study.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND IMPLICATIONS

Overview

In this chapter, the main focus of the study and the findings will be reviewed and summarized. Conclusions will be drawn and a synthesis proposed from the findings as related to the problem stated and the research questions asked in Chapter One. Implications for practice, theoretical development, and recommendations for further research will be discussed.

Summary

This study has been an attempt to assess the potential of early identification of students at risk of dropping out of college for intervention and retention purposes. With an emphasis on diagnosis and prevention rather than prediction of student attrition, this descriptive study explored the question, "How do you identify as early as possible those students who are at risk of failing or dropping out of college so that intervention can take place?" by field testing two diagnostic instruments with a group of first semester college students. As well, this study attempted to determine and describe the factors contributing to current student attrition rates within the School of Computer Studies at Seneca College. The study addressed the gap that exists between our knowledge of individual student needs and our subsequent ability to match them to appropriate campus resources.

In some respects, the research approach was such as might be taken in a pilot study. It was based on a discovery and understanding methodology and, as descriptive research, was non-experimental and included both quantitative and qualitative elements. The research was completed in four related phases (i.e., Background, Early Identification, Intervention, and Evaluation).

Tinto's (1975) institutional model of student retention based on a theory of academic and social integration of the student provided a theoretical framework for the elicitation and understanding of an intervention model of student retention for the School of Computer Studies at Seneca.

Previous research indicated that the highest rate of attrition occurs in the first year of enrollment. Anecdotal accounts of faculty and students, together with the results of the analysis of first-year enrollment patterns, indicated that student attrition is a significant problem within the School of Computer Studies at Seneca. For this reason and because of the support received from administration and faculty in this area, the research study was carried out within the School of Computer Studies.

In order to meet the objectives of the four research phases, a number of different methodologies were used, including a retrospective analysis of enrollment patterns, interviews, questionnaires, commercial diagnostic instruments, and a computerized tracking system. These

methods were chosen based on their appropriateness for the research phase in which they were used.

During the first research phase, background information was gathered in an attempt to describe the attrition process within the School of Computer Studies. A retrospective analysis of enrollment patterns between first and second semester for the previous five years indicated a significant rate of attrition ranging from 24.1% to 34.3%. By conducting faculty and student interviews and administering faculty and student questionnaires, perceptions were gathered and analyzed in order to understand and describe the factors related to students dropping out of college and what might be done to reduce the dropout rate. A significant finding was the gap in perception between students and faculty in terms of their interaction within the classroom.

During the second phase, two diagnostic instruments were administered for purposes of identifying students at risk of dropping out of college. The Noel/Levitz College Student Inventory (CSI) measured student attitudes, levels of commitment and intent, academic and social motivation, and receptivity to institutional help. Of particular interest to this study were the four summary scores provided for individual students (i.e., Dropout Proneness, Predicted Academic Difficulty, Educational Stress, and Receptivity to Institutional Help). In relation to American national norms

established for this instrument, the sample population was determined to have higher levels of dropout proneness and receptivity to institutional help, which finding confirms the potential of an early identification and intervention model of student retention. The Learning and Study Strategies Inventory (LASSI) measured student attitudes and practices for learning and studying, as well as levels of motivation, on ten different scales. In relation to American national norms established for this instrument, the sample population appeared to have lower scores on four of the scales (i.e., Attitude, Motivation, Use of Support Techniques and Materials, and Test Strategies and Preparing for Tests).

An Individualized Advisement Session form (see Appendix F) was used in an attempt to determine the action taken by the sample population as a result of the preliminary intervention activities implemented in the third phase of this study. It appeared that very few students initiated action as a result of the intervention activities.

A computerized database was developed in order to track the sample population for evaluation purposes in Phase 4. The database provided the data to enable description of the process of first semester student attrition within the School of Computer Studies, including rate, timing, and causes. Five categories of students were identified (i.e., Successful Persisters, Successful Persisters - Weak,

Successful Withdrawals, Unsuccessful Persisters, and Unsuccessful Withdrawals). The rate of attrition from Seneca was 11.9%. Only four successful persisters (i.e., they were eligible to continue in second semester) actually withdrew from Seneca. A significant number of the sample population (i.e., 56 students or 17.5% of the total sample) were promoted to second semester but appeared to be weak academically (i.e., they were unsuccessful in two or more of the five credits undertaken in first semester). The majority of the student withdrawals (i.e., 50% of the total sample) occurred at the end of first semester for academic reasons.

In order to discover and describe the diagnostic accuracy of the CSI and the LASSI, the data collected in the computerized database were processed to determine the relationship between the enrollment status of the sample population and the findings of the two instruments. Using the CSI Dropout Proneness scores of 6 to 9 inclusive as an indicator of risk, it appeared that the CSI was accurate in identifying students at risk 46.8% of the time. The CSI appeared to achieve a higher level of accuracy (i.e., 67.6%) in identifying students with a low level of risk. There appeared to be a strong relationship between the CSI Receptivity to Institutional Help scores and student persistence. Of those students scoring high in receptivity

(i.e., 6 to 9 stanine range), 89 of the 98 students or 90.8% actually persisted.

By comparing the percentiles on the ten scales of the LASSI instrument with the enrollment status of the sample population, there appeared to be a significant relationship between student withdrawal behaviour and low scores on three of the LASSI measures (i.e., Attitude, Motivation, and Test Strategies). However, there appeared to be little relationship between student persistence and high scores on the LASSI scales. By comparing the findings of the LASSI to those of the CSI, there did appear to be a significant relationship between the two.

Staff and student interviews were conducted in an attempt to evaluate the usefulness of the diagnostic instruments and the preliminary interventions. Both staff and students supported an assessment approach which measures academic ability as well as attitude, motivation, commitment, and intent. The findings indicated limited support for the use of the CSI and LASSI as diagnostic instruments or for the preliminary interventions.

Conclusions

The questions which guided the methodology and research approach in this study provided the basis for drawing conclusions.

Background

In recognition of the importance of first understanding the problem before attempting to "fix" it, the first phase of this research within the School of Computer Studies addressed the following questions:

1. **What are the historical patterns of student attrition between first and second semester?**

A simple retrospective analysis of the enrollment statistics as of Day 10 for first and second semester Computer Studies programs for the previous five academic years (i.e., 1986/87 to 1990/91) revealed an attrition rate ranging from 24.1% to 34.3%. This finding was by no means conclusive since no attempt was made to determine if those students who had left Computer Studies programs were elsewhere at Seneca. However, there was sufficient evidence to indicate that student attrition was a significant problem for Computer Studies.

2. **What is the process of first semester student attrition, including rate, timing and causes?**

Tracking of the sample population provided data which were considerably more detailed and descriptive than the retrospective analysis. By being able to account for the enrollment behaviour of all students within the sample, it appeared that 11.9% actually withdrew from Seneca. This finding is reasonably consistent with the Dietsche (1989) finding of a 14.1% attrition rate between first and second

semester at Humber College. Given the finding that 46.8% of the total sample experienced academic difficulty or dropped out, by continuing to track the sample population, it might be expected that the actual attrition rate will double by the end of second semester, similar to the Dietsche (1989) finding of a 30.4% attrition rate after one year. It might be concluded that the small number of successful withdrawals (i.e., 1.2% of the total sample) could be due to the current recession and poor job market.

Based on the results of the retrospective analysis and the data from this study, it might be concluded that there is significant potential for student retention within the School of Computer Studies through early identification and intervention.

As reported in Chapter Four, and similar to the Dietsche (1989) finding, the majority of students (i.e., 50% of the total withdrawals) officially withdrew at the end of first semester as the result of a promotion meeting directive. Also similar to the Dietsche finding, it can be concluded that lack of academic integration, as discussed earlier, was the reason for the withdrawal directive. Most of the 15 students (i.e., 39.5% of the total withdrawals) did not state a reason for withdrawal so it is difficult to draw conclusions in this regard. Unlike the Dietsche (1989) finding that 32.5% of the student dropouts were successful dropouts, the successful withdrawals in this study represent

only 10.5% of the total dropouts. Again, it might be concluded that the poor economy and job market were the reasons for a lower dropout rate for this category of student.

3. How may the factors contributing to student attrition be identified?

Recognizing the prominence of the Tinto (1975) model in retention research and its emphasis on the interactions between students and the institution, an attempt was made to identify student and institutional perceptions of the factors contributing to student attrition within the School of Computer Studies. Based on the findings from related research and the interviews conducted during the first phase of this study, a questionnaire was developed to gather faculty and student perceptions of the importance of 17 different factors related to student attrition. It can be concluded that the findings were consistent with earlier research (e.g., Pantages and Creedon, 1978) and show that academic matters, including deficient grades, dissatisfaction with quality of curricula and instruction, and lack of goal commitment, were the most significant factors. Consistent with the theme pervading most retention research was the finding that faculty play a significant role in student retention. Similar to the Beal and Noel (1980) finding that a caring attitude of faculty and staff was considered the most important factor in student retention,

with high-quality teaching a strong second, students ranked "poor teacher/student interaction" (i.e., individual needs of students are not met within the classroom setting) as the most significant factor in student dropout. It was somewhat alarming to note the gap in perception between students and faculty in terms of the importance of poor teacher/student interaction as a factor in student attrition. A strong correlation exists between the findings from Phase 1 of this study and the findings from the student satisfaction research conducted at Seneca by Badger (1991) where student perceptions of faculty lack of concern for teaching and student development was a recurring theme. It can be concluded that poor teacher/student interaction is a very real problem for Computer Studies students, a problem which could be exacerbated by the fact that many faculty do not perceive this to be a problem.

Both faculty and students identified weak academic skills, lack of or shift in goal commitment, weak personal study habits, and lack of academic integration as significant factors. It might be concluded that early identification of student needs in these areas could help address the attrition problem.

4. How may strategies to reduce student attrition be identified?

Having identified the factors contributing to student attrition within the School of Computer Studies, the next

step was to identify possible strategies for reducing this attrition. The findings from the faculty and student interviews were consistent with related research in that faculty were seen as the key people in terms of improving student success. However, it is important to remember the Beal and Noel (1980) finding that lack of faculty support inhibited retention efforts. The importance of the role of faculty was further reinforced by the findings from the student questionnaires which indicated that improving the quality of teacher/student interaction in the classroom and enhancing faculty teaching skills and techniques were considered by students to be very significant strategies. While faculty ranked the need to enhance their teaching skills and techniques as significant, they did not perceive a strong need to improve the quality of teacher/student interaction in the classroom. It can be concluded that the attitudes and teaching abilities of faculty as perceived by the students are extremely important in student retention and success. It could also be concluded that the gap in perception between students and faculty as it relates to their interaction might be contributing to student dissatisfaction with their current relationship with faculty.

The findings from this research reinforce the importance of academic integration (i.e., students' involvement in and perception of their academic program) as

proposed in the Tinto (1975) model and further supported by the Dietsche (1989) finding that it was the single most important persistence factor. Based on the findings from the questionnaires and the evaluation interviews, both faculty and students concurred with the strategies of skills assessment and foundation courses, career and program counselling, tutorials and learning centres. It can be concluded that an effective model of student retention is one which includes early identification of student needs (e.g., academic, motivational, attitudinal, etc.) followed by intervention through counselling and matching of needs to appropriate campus resources.

Early Identification

Having concluded that early identification is a critical component of a student retention model, the next question to be addressed was,

5. **How useful is a diagnostic instrument in identifying students at risk of dropping out in first semester?**

One possible method proposed for consideration in this study was faculty identification of students at risk of failing or dropping out. However, the vast majority of faculty and student responses to the questionnaires indicated that faculty would not be able to identify these students until well after the first month of classes. It might be concluded that the use of faculty identification of

"at risk" students would be too late in many cases for effective intervention.

During the interviews conducted in Phases 1 and 4 and based on the findings from the questionnaires, there appeared to be strong support for the use of a diagnostic instrument prior to enrollment for purposes of early identification of "at risk" students. Based on a review of available instruments, the Noel/Levitz College Student Inventory (CSI) and Learning and Study Strategies Inventory (LASSI) were selected for purposes of this study. As reported in Chapter Four, the diagnostic accuracy of the CSI and LASSI were determined by tracking the sample population from Semester 1 (Fall 1991) to Semester 2 (Spring 1992) and comparing the findings from the two instruments with the enrollment status of the students. Conclusions regarding the usefulness of the two instruments are as follows:

Noel/Levitz College Student Inventory (CSI)

The distribution of scores for the Dropout Proneness scale of the CSI as shown in Figure 11 indicated that the sample population differed from the normative sample. Because the instrument was normed in the United States, one could speculate that cultural differences might account for this discrepancy. It can be concluded that the correlation between the CSI results and the student enrollment status might be stronger if local norms had been established for this instrument.

Based on the finding reported in Chapter Four that after one semester 46.8% of the students identified as being at risk by the CSI actually demonstrated "at risk" behaviour, it can be concluded that the CSI has some usefulness for early identification of students at risk of dropping out or experiencing academic difficulty. The finding from this study provides some support for the finding from the Schreiner (1991) study that "students who did not persist into their second year had significantly higher dropout proneness scale scores than those who did persist" (p. 14). It is important to note that the CSI was intended to measure dropout proneness based on the duration of a student's program (e.g., three years) and not simply during the first semester. Therefore, it can be further concluded that if tracking of the sample population continues over the next three to four years, the relationship between the findings of the CSI and the eventual enrollment behaviour of students might be stronger.

One might conclude from the results of the evaluation interviews conducted in Phase 4 that the CSI may not be the best instrument for early identification purposes. Concern was raised for the possible cultural bias of the instrument and the time it took students to complete the 194 questions. The CSI primarily focuses on the traditional high school graduate entering college and may not adequately address the

needs of the increasing number of older students entering the School of Computer Studies at Seneca.

Learning and Study Strategies Inventory (LASSI)

As illustrated in Figure 10, the distribution of scores for the LASSI appeared to indicate that the sample population differed from the normative sample. Again, this could be due to cultural differences since the LASSI instrument was also developed and normed in the United States. It can be concluded that the diagnostic accuracy of the LASSI might be enhanced if local norms were developed and used.

As reported in Chapter Four, there appeared to be less evidence of diagnostic accuracy for the LASSI than for the CSI in identifying students at risk of failing or dropping out of college. There appeared to be very little differentiation between the scores of the persisters and the withdrawals. While there appeared to be a strong relationship between low scores on three of the LASSI scales (i.e., Attitude, Motivation, and Test Strategies) and withdrawal behaviour, the findings did not indicate a similar strong relationship between high scores on these three scales and persistence behaviour. In fact, as illustrated in Table 13, many of the persisters had low scores on these three scales as well. It can be concluded that the LASSI is not an effective means of early identification of students at risk of failing or dropping out. As concluded with the findings of the CSI, continued tracking of the sample population over

the next three to four years may indicate a stronger relationship between the LASSI findings and the eventual enrollment behaviour of the sample population.

There was no clear evidence from the findings resulting from the evaluation interviews that the LASSI is the most effective means of early identification of "at risk" students. Based on feedback from faculty and students, it can be concluded that the LASSI might best be administered at about the mid point of the first semester once students understand what the faculty's expectations are. As noted earlier, this might be too late in many cases for effective intervention. However, it can be concluded that the LASSI might be useful as a counselling tool for use with those students who have been identified as being "at risk." This is supported by the Pintrich and Johnson (1990) recommendation that the LASSI be used in a diagnostic manner to identify areas of motivation or learning strategies that need improvement.

Intervention

While the primary focus of this study was to research the usefulness of two diagnostic instruments for early identification purposes, emanating from this research were some conclusions about the question -

6. **Which intervention strategies might be the most effective in improving student retention in first semester?**

As reported in Chapter Four, very little action appeared to have been taken by faculty or students as a result of the reports they received from the CSI and LASSI instruments. It could be concluded that faculty and students did not "buy into" the early identification and intervention project undertaken as part of this study. If, in fact, there was lack of "ownership" on the part of faculty and they perceived the project as an onerous "add on", it might be concluded that students also did not perceive the value of it. It is important to note that the CSI was intended to be an intrusive measure with faculty advisors initiating contact with students and discussing the results of the CSI Student Report (see Appendix P) in an attempt to match student needs with available campus resources. It can be concluded that had faculty advisors been available at the School of Computer Studies to intervene with students based on the results of the CSI and LASSI, these preliminary attempts at intervention may have been more effective.

The findings from the evaluation interviews appeared to indicate that the Schedule of Student Resources (see Appendix T) was an effective intervention strategy. It can be concluded that the provision to students of such a schedule might be helpful in matching student needs with campus resources.

Student Advisement Program

Considering the significance student advisement was given in previous research and the importance of the role of faculty as shown from the findings of this study, it can be concluded that an intervention model of student retention for the School of Computer Studies at Seneca should include a student advisement component. While the findings from the evaluation interviews as reported in Chapter Four showed support for student advisement, concern was raised about the cost of such a program and the role of faculty and counsellors. It can be concluded that additional research should be undertaken to investigate different student advisement models for the School of Computer Studies.

Finally, it can be concluded that there is potential for improving student retention within the School of Computer Studies at Seneca through early identification and intervention. However, it cannot be concluded that either the CSI or the LASSI is the best early identification instrument. Additional research should be undertaken in an attempt to discover the most effective diagnostic instrument and intervention strategies.

Implications

The implications for practice and theory resulting from this research are far reaching. The findings confirm the significance of the problem of student attrition for the School of Computer Studies at Seneca College and provide an

interactive model of student retention which helps to bridge the gap between theory and practice.

Implications for Practice

The findings from this study provide the School of Computer Studies with a description of the problem of student attrition for that area. Understanding the process of attrition, including the rate, timing, and causes, provides a basis for action. Realizing that a gap exists between faculty and student perceptions of the quality of teacher/student interaction in the classroom should precipitate efforts to address this aspect of the student attrition problem. As well as insight into the causes of attrition, the findings from the faculty and student questionnaires provide specific recommendations for improving success for Computer Studies students.

The establishment of local norms for the CSI and LASSI instruments would enhance the diagnostic or predictive value of these instruments. Continued tracking of the sample population will provide additional longitudinal data to extend the description of the attrition problem to semesters beyond the first semester under study here. As well, the usefulness of the CSI and LASSI as early identification instruments over a two- or three-year period could be determined by comparing the results of the instruments with the enrollment status of students for each subsequent semester.

The implications for practice resulting from this study extend beyond the School of Computer Studies to other academic areas at Seneca and to other CAATs. Based on the findings from this study and supported by the findings from the Badger (1991) study, some generalizations might be made to other academic areas at Seneca, especially with respect to student perceptions of the quality of teacher/student interactions. Increased opportunity for students to provide feedback to faculty on a college-wide basis could be a positive step towards reducing the gap in perception that exists between faculty and students in this regard. These findings support the recommendations of the Seneca Faculty P.R.I.D.E. report (1991) which included student feedback to faculty as an essential component of this performance review program.

It was evident from the findings that for early identification to be effective as a retention measure, it must be followed by intervention in the form of advisement and counselling. Providing students with information about their areas of need was not enough to prompt action. Intrusive action on the part of the institution is necessary to direct students to the campus resources that match their area of need.

The findings support the systematic approach currently being implemented by the Centre for Educational Effectiveness at Seneca. This systematic process includes

research to determine what has already been done at Seneca and elsewhere (i.e., "what works"), **assessment** prior to enrollment to measure the cognitive and affective skill areas, **intervention** in the form of advisement or counselling, **placement** of students in appropriate level courses, and **tracking** to provide objective measures of the effectiveness of assessment and intervention.

Implications for Theory

While the focus of this research was on discovery and description for purposes of taking action, it does have theoretical implications in terms of helping to bridge the gap between theory and practice. It extends what we know about the attrition process and provides a practical model for student retention based on early identification and intervention. Very little of the existing literature on the issue of student attrition is Canadian and even less is directly related to the CAATs. The findings from this study make a valuable contribution at a time when the problem of student attrition is receiving a great deal of attention from the CAATs and the Ministry of Colleges and Universities. With some refinements, it could serve as a model for further research within Seneca and the CAAT system.

This research extends what we know from the Dietsche (1989) study by further describing the factors contributing to student attrition, exploring strategies to improve reten-

tion, and describing a model for early identification and intervention. The findings confirm and support earlier findings that faculty play a major role in student retention.

The findings confirm the importance of the student-institutional "fit" and of assessing student attitudes, intentions, commitments, and interactions with the institution as proposed by the Tinto (1975) model.

The findings extend what is known about the usefulness of the CSI and LASSI as early identification instruments within the CAAT system.

Recommendations for Further Research

The qualitative and descriptive approach taken with this research enhances understanding of the problem of student attrition within the School of Computer Studies at Seneca. As well, it provides some practical insights into the potential of an early identification and intervention model of student retention. However, the results could be improved by carrying out further research with a longitudinal design in an attempt to discover any causal relationship between or among the factors or variables represented in this study. While the task of isolating individual variables related to the problem of student attrition is a complex one, more expansive long- and short-term research is required to extend the description provided in this study.

While gathering the perceptions of students currently at Seneca was useful in describing the attrition problem, followup with those students who actually withdrew from Seneca would increase our understanding of the problem.

There appears to be some evidence to support the use of the CSI for early identification purposes and the LASSI as a counselling tool. However, further studies should be undertaken to test the reliability and validity of the CSI and LASSI. As well, local norms should be established for the instruments in order to enhance their diagnostic value. A wealth of information resulted from the computer analysis of the CSI data collected in Phase 2 of this study, and further research might be undertaken to explore the relationship between these extensive findings and the continued enrollment behaviour of the sample population. As well, a multiple regression analysis to further explore the relationship of the independent variables (i.e., the LASSI ten scales and the CSI 19 scales) and the dependent variables (i.e., GPA and enrollment status) would greatly enhance understanding of the diagnostic value of the CSI and LASSI instruments.

Further research should be undertaken to replicate parts of this study in order to assess other diagnostic instruments. In particular, because of its design for the CAAT system, the Dietsche (1989) instrument might be

utilized in a further study to determine its usefulness at Seneca.

Further research should be conducted to assess the effectiveness of specific intervention strategies. One approach might be the utilization of small sample research methods to test one intervention at a time as suggested by Boyd, Magoon, and Leonard (1981). Further research should be undertaken to determine the most appropriate student advisement program for the School of Computer Studies.

Afterword

That the problem of student attrition is a complex one has certainly been confirmed by this study. As is often true with research, the researcher is left with many more questions than answers. Consequently, the findings from this study strongly support the need for continued institutional research related to student retention within the CAATs. Ideally, efforts in this regard should be cooperative and coordinated among CAATS in a system-like approach.

Also worthy of comment is the dichotomous situation the CAATS are currently caught in where government funding is being drastically cut and yet there is a tremendous push to enhance student opportunities for access and success. Strong leadership with an emphasis on teaching and learning is essential at every level within the CAATs for these challenging times.

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Anderson, Edward "Chip". (1985). Forces influencing student persistence and achievement. Increasing student retention (pp. 44-61). San Francisco, CA: Jossey-Bass.

Anderson discusses persistence and achievement as important factors in student retention. He describes the factors which encourage persistence to be -

1. Individuals who take a personal interest in students.
2. Financial support that adequately fulfils basic needs.
3. Assessment and referral procedures, including student interviews.
4. Orientation activities beginning soon after admission and continuing through the first term.
5. Counselling services to resolve personal problems and interpersonal conflicts.
6. A support system within the college environment which meets students' need to belong.

The factors which enhance achievement are identified by Anderson as -

1. Diagnostic testing of student skills and preparation.

2. Offerings of courses and curricula consistent with students' skill and preparation levels.
3. Comprehensive educational planning and academic advising.
4. Assessments of study skills and needs for tutorial assistance.
5. Learning skills instruction and course content tutoring.
6. Monitoring of student progress and performance - academic alert systems.
7. Recognition of academic achievement and reinforcement of progress.

(The) Association for Institutional Research. (Spring 1991). Beginning to understand why older students drop out of college. (Research Report No. 39). Cheryl Farabaugh-Dorkins, Assistant to the Vice Chancellor for Administration, Southern Illinois University at Carbondale.

This study, conducted at a large public rural residential university in the Midwest United States, utilized a questionnaire to gather data on identified attrition variables, and through path analysis, tested the utility of the proposed model for explaining non-traditional student attrition. The conceptual model of

non-traditional undergraduate student attrition developed by Bean and Metzner (1985) was modified for this study by increasing the major categories of variables from seven to eight. The most important explanatory variable in the model tested in this study was intent to leave, followed by GPA, and goal commitment. Age, support, and academic problems also proved important in the explanation of attrition among older students. The author suggests that since intent to leave is a strong predictor of actual attrition that institutions should attempt to collect data relevant to students' intentions at the time of admission.

Bers, Trudy H. (1989). Tracking systems and student flow. New Directions for Community Colleges: Using Student Tracking Systems Effectively, 66, Summer 1989, 3-7. San Francisco, CA: Jossey-Bass.

The author describes five factors contributing to the recent significant interest in student tracking systems: marketing, outcomes measurement, renewed emphasis on teaching and learning, improved communications with a diverse student body, and need for cost-benefit analysis. She suggests that it will be at least another five years before fully integrated systems are in place, tested and refined. Concern for

maintaining the effectiveness of personal contacts while utilizing the capability of technology is highlighted.

Bers, Trudy H. & Rubin, Alan M. (1989). Tracking students in community colleges: The unreported challenges. New Directions for Community Colleges: Using Student Tracking Systems Effectively, 66, Summer 1989, 55-62. San Francisco, CA: Jossey-Bass.

Through a discussion of case studies, the authors illustrate the problems associated with using computer logic to interpret the meaning of human behaviour. They emphasize that a computer-based tracking and intervention system be used to supplement rather than replace human involvement.

Central Piedmont Community College. (1991). Academic advisement 1990-91. Unpublished report. Charlotte, NC: Barbara Andrews, Acting Coordinator of Advisement.

This report describes the development and implementation of an advisement system. It is a practical reference source for purposes of developing an advisement system as it includes samples of survey

instruments, table of contents for an advisor training manual, letters to students, etc.

Central Piedmont Community College. (1991). Advisement study: Evaluation of the first year 1990-91. Unpublished report. Charlotte, NC: Barbara Andrews, Acting Coordinator of Advisement.

Three questionnaires were used to gather perceptions of faculty, advisors, and students in order to evaluate the effectiveness of a new student advisement program. This report could serve as a practical reference for those wishing to evaluate a student advisement program.

Dance, Terry (1989). Access & quality: Preparatory & remedial education in the colleges. Unpublished report. Toronto, ON: Council of Regents.

Grossett, Jane M. (1991). Patterns of integration, commitment, and student characteristics and retention among younger and older students. Research in Higher Education, 32(2), 159-177.

The process of younger and older student persistence was examined by Grossett in order to explore the differential persistence impact of the components of

the Tinto model. Her findings indicate that measures representing integration, with academic being more significant than social, and goal commitment were the most important to younger student persistence. Self-confidence related to the academic demands of college measured by self-assessment of study skills was the most important factor to the persistence of older students. Goal commitment was important to the persistence of both age groups. These findings are important to the study of student retention at Seneca College, especially the School of Computer Studies, because of the increasing number of older students.

Neumann, Yoram, & Finaly-Neumann. (1988). Predicting juniors' and seniors' persistence and attrition: A quality of learning experience approach. Journal of Experimental Education. 129-140.

The findings of this study indicate that the three dominant predictors of juniors' and seniors' persistence were student-faculty contact, students' involvement in their academic program, and the content of that program.

Noel/Levitz Centers for Institutional Effectiveness and Innovation, Inc. (1990). Guide for RMS coordinators and advisors. Coralville, IA: Laurie Schreiner.

The recommendations contained in this guide include that advisors be aware of the full range of referral sources available on campus; refer at the right time with sensitivity and genuineness; follow up the referral with continued interest in the student; file a retention contact report with the RMS coordinator; implement other interventions as appropriate to the campus. The role of the advisor is one of "coach" assisting the student to be self-directed and an independent learner. Unless properly qualified, faculty should not undertake the role of personal counsellor; students should be referred to a professional counsellor where necessary.

Noel/Levitz Centers for Institutional Effectiveness and Innovation, Inc. (1991). A compendium of successful, innovative retention programs and practices. 1989 and 1990 Winners of the Noel/Levitz Retention Excellence Awards. Coralville, IA.

The integrative retention model developed at Monmouth College is important to consider in the context of this

research study since its three components include an advising system (providing academic, career and personal counselling through faculty, professional counsellors, and peer advisors), a freshman seminar course, and a computerized early warning system.

Pascal & Kanowich (1979). Student withdrawals from Canadian universities. A Study of Studies. Toronto, ON: Ontario Institute for Studies in Education.

Roueche, John E. and Baker, George A. III. (1987). Access & excellence: The open-door college. Washington, DC: The Community College Press.

The Miami-Dade model reported by Roueche and Baker includes reforms in eight basic areas: curriculum reforms, including general education courses; assessment testing; basic skills support; emphasis on excellence; standards of academic progress;academic alert system; advisement and graduation information system; faculty and staff development. Of particular interest is the academic alert system which identifies students with midterm weaknesses, including poor attendance records, and prescribes personal intervention strategies to help them. As part of the emphasis on excellence at Miami-Dade, the standards of

academic progress system monitors student progress in terms of the minimum standards set. Students may be placed on warning, probation or suspended status if these standards are not maintained.

Saenger-Ceha, Mya M. Th. (1970). Psychological and social factors in student drop-out. Amsterdam, Holland: Swets & Zeitlinger.

Stevenson, Michael R., Walleri, R. Dan, & Japely, Saundra M. (1989). Student intentions, follow-up studies, and student tracking. New Directions for Community Colleges: Using Student Tracking Systems Effectively, 66, Summer 1989, 63-74. San Francisco, CA: Jossey-Bass.

The authors describe the six phases of a followup system development model to assist colleges in clarifying where they are in the development of a similar system and identifying areas for attention. They conclude that a comprehensive student tracking system should combine data about student intentions, experiences at the college, as well as post-college experiences and evaluations of the institution.

Tąta, Chet Jr. (1981). The effect of an intrusive advisement program on first-term freshmen attrition. Paper presented at the Annual Forum of the Association for Institutional Research. Arlington, TX: University of Texas at Arlington. (Eric Document Reproduction Service No. ED 205096)

This experimental study tested the hypothesis that students receiving intrusive advisement would be retained at a greater rate than those from whom the treatment was withheld. The study further tested the construct validity of the Tinto model of attrition. While the findings showed that the advisement program failed to impact the attrition rate, the study has value in terms of its quasi-experimental design.

APPENDICES

Contents

APPENDIX A

QUESTIONNAIRE

Faculty/Student Interview Re Attrition

1. What percentage of students drop out of your program area before graduation in your estimation?

2. What do you feel the five major causes of student attrition are in your program area? Please rank them in terms of significance.

3. At what point in the semester do you think faculty form perceptions as to which students will and will not be successful?

4. In considering the five major causes of student attrition identified in #2 above, what are the corresponding intervention strategies that might effectively address each of these causes.

5. In your opinion, what is the likelihood of each of the strategies identified in #4 above being implemented at Seneca College?

6. In your opinion, what is the likelihood of success for each of the strategies identified in #4 above?

7. For the successful implementation of the strategies identified in #4 above, who should be involved and to what extent?

8. Do you believe students are able to self-identify areas of weakness prior to the start of college? (eg. study skills, lack of career focus, etc.)

APPENDIX B

SENECA COLLEGE QUESTIONNAIRE
SCHOOL OF COMPUTER STUDIES

The purpose of this questionnaire is to gather faculty and student perceptions about the reasons students drop out from Seneca College Computer Studies programs before graduating and the strategies that might help students to successfully complete college. Your answers will be kept completely anonymous; individual responses are not identifiable.

The following statements represent opinions, and your agreement or disagreement will be determined on the basis of your particular beliefs. Indicate what you believe, rather than what you think you should believe. Please indicate your reactions to the statements below by circling the appropriate letter using the following scale -

(SA) strongly agree (A) agree (NA) neither agree nor disagree (D) disagree (SD) strongly disagree

A. I believe that students drop out of college prior to graduation for the following reasons -

1. **(SA) (A) (NA) (D) (SD)** • weak academic skills (eg. literacy, numeracy, problem-solving)
2. **(SA) (A) (NA) (D) (SD)** • lack of goal commitment (i.e., lack of career/program focus)
3. **(SA) (A) (NA) (D) (SD)** • shift in goal commitment (i.e., change in attitude toward program or course sometime after enrollment)
4. **(SA) (A) (NA) (D) (SD)** • weak personal study habits (eg. study skills, time management, note taking, etc.)
5. **(SA) (A) (NA) (D) (SD)** • personal problems (emotional, family-related, substance abuse, etc.)
6. **(SA) (A) (NA) (D) (SD)** • lack of appropriate day care for child(ren)
7. **(SA) (A) (NA) (D) (SD)** • lack of appropriate and affordable housing
8. **(SA) (A) (NA) (D) (SD)** • problem of commuting distance or lack of convenient and affordable transportation
9. **(SA) (A) (NA) (D) (SD)** • lack of academic integration (i.e., positive perception of program; active participation in attending classes, completing homework assignments, etc.)
10. **(SA) (A) (NA) (D) (SD)** • lack of social integration within the college (i.e., limited interaction with faculty and peers outside the classroom; limited involvement in extracurricular activities, etc.)
11. **(SA) (A) (NA) (D) (SD)** • financial reasons
12. **(SA) (A) (NA) (D) (SD)** • lack of confidence in ability to succeed
13. **(SA) (A) (NA) (D) (SD)** • excessive part-time work hours interfere with ability to succeed
14. **(SA) (A) (NA) (D) (SD)** • poor teacher/student interaction (i.e., individual needs of students are not met within the classroom setting)
15. **(SA) (A) (NA) (D) (SD)** • college program or course of study is not perceived by the student to be challenging and stimulating
16. **(SA) (A) (NA) (D) (SD)** • lack of perceived relevance of course of study
17. **(SA) (A) (NA) (D) (SD)** • scheduling problems (i.e., poor timetable)

B. Considering the 17 items listed above and the college students you know, which three items do you think are the most significant reasons for students generally to drop out of college prior to graduation. Please indicate the item numbers as follows:

First #_____

Second #_____

Third #_____

Additional Comments:

_____

_____

C. I believe that the following strategies would be effective in reducing student dropout -

(SA) strongly agree (A) agree (NA) neither agree nor disagree (D) disagree (SD) strongly disagree

1.	**(SA) (A) (NA) (D) (SD)**	•	provide academic skills assessment and supportive foundation courses for students identified as underprepared
2.	**(SA) (A) (NA) (D) (SD)**	•	provide counselling related to career and program choice prior to enrollment
3.	**(SA) (A) (NA) (D) (SD)**	•	provide an advisement program whereby each student has a faculty advisor
4.	**(SA) (A) (NA) (D) (SD)**	•	improve the quality of teacher/student interaction in the classroom
5.	**(SA) (A) (NA) (D) (SD)**	•	provide mandatory college and program orientations for all incoming students
6.	**(SA) (A) (NA) (D) (SD)**	•	develop and maintain a comprehensive and integrated tracking system to monitor student progress and achievement and provide appropriate feedback
7.	**(SA) (A) (NA) (D) (SD)**	•	integrate time management, note taking, study skills techniques into individual college courses
8.	**(SA) (A) (NA) (D) (SD)**	•	provide tutorials and learning centres for students to get extra help outside of class
9.	**(SA) (A) (NA) (D) (SD)**	•	increase access to social activities and opportunities to make friends at college
10.	**(SA) (A) (NA) (D) (SD)**	•	improve access to financial aid, scholarships and bursaries
11.	**(SA) (A) (NA) (D) (SD)**	•	improve access to personal counselling
12.	**(SA) (A) (NA) (D) (SD)**	•	increase on campus part-time job opportunities
13.	**(SA) (A) (NA) (D) (SD)**	•	provide for ongoing course evaluation and modification which includes student feedback
14.	**(SA) (A) (NA) (D) (SD)**	•	enhance faculty teaching skills and techniques
15.	**(SA) (A) (NA) (D) (SD)**	•	develop an organizational culture based on a student-centred focus

D. Considering the 15 items listed above, please indicate which you believe to be the three most important to help students generally to successfully complete college. Please indicate the item numbers as follows:

First #_____

Second #_____

Third #_____

Additional Comments

_____

_____

(A) (B) (C) (D) (E)

E. I believe that faculty are able to predict which students will or will not be successful -

a) within the first 10 days of classes;
b) after the first month of classes;
c) by mid-semester;
d) during the second half of the semester;
e) at the end of the semester.

F. If you could make two important changes to improve student success at Seneca College, what would they be?

_____

_____

Thank you for taking the time to complete this questionnaire.

PLEASE RETURN THE COMPLETED QUESTIONNAIRE TO:

Vicki Milligan, ASAP Coordinator
Don Mills Campus

retques3.med

APPENDIX C

SENECA COLLEGE QUESTIONNAIRE
SCHOOL OF COMPUTER STUDIES

The purpose of this questionnaire is to gather faculty and student perceptions about the reasons students drop out from Seneca College Computer Studies programs before graduating and the strategies that might help students to successfully complete college. Your answers will be kept completely anonymous; individual responses are not identifiable.

The following statements represent opinions, and your agreement or disagreement will be determined on the basis of your particular beliefs. Indicate what you believe, rather than what you think you should believe. Please indicate your reactions to the statements below by circling the appropriate letter using the following scale -

(SA) strongly agree (A) agree (NA) neither agree nor disagree (D) disagree (SD) strongly disagree

A. I believe that students drop out of college prior to graduation for the following reasons -

1. **(SA) (A) (NA) (D) (SD)** • weak academic skills (eg. literacy, numeracy, problem-solving)
2. **(SA) (A) (NA) (D) (SD)** • lack of goal commitment (i.e., lack of career/program focus)
3. **(SA) (A) (NA) (D) (SD)** • shift in goal commitment (i.e., change in attitude toward program or course sometime after enrollment)
4. **(SA) (A) (NA) (D) (SD)** • weak personal study habits (eg. study skills, time management, note taking, etc.)
5. **(SA) (A) (NA) (D) (SD)** • personal problems (emotional, family-related, substance abuse, etc.)
6. **(SA) (A) (NA) (D) (SD)** • lack of appropriate day care for child(ren)
7. **(SA) (A) (NA) (D) (SD)** • lack of appropriate and affordable housing
8. **(SA) (A) (NA) (D) (SD)** • problem of commuting distance or lack of convenient and affordable transportation
9. **(SA) (A) (NA) (D) (SD)** • lack of academic integration (i.e., positive perception of program; active participation in attending classes, completing homework assignments, etc.)
10. **(SA) (A) (NA) (D) (SD)** • lack of social integration within the college (i.e., limited interaction with faculty and peers outside the classroom; limited involvement in extracurricular activities, etc.)
11. **(SA) (A) (NA) (D) (SD)** • financial reasons
12. **(SA) (A) (NA) (D) (SD)** • lack of confidence in ability to succeed
13. **(SA) (A) (NA) (D) (SD)** • excessive part-time work hours interfere with ability to succeed
14. **(SA) (A) (NA) (D) (SD)** • poor teacher/student interaction (i.e., individual needs of students are not met within the classroom setting)
15. **(SA) (A) (NA) (D) (SD)** • college program or course of study is not perceived by the student to be challenging and stimulating
16. **(SA) (A) (NA) (D) (SD)** • lack of perceived relevance of course of study
17. **(SA) (A) (NA) (D) (SD)** • scheduling problems (i.e., poor timetable)

B. Considering the 17 items listed above and the college students you know, which three items do you think are the most significant reasons for students generally to drop out of college prior to graduation. Please indicate the item numbers as follows:

First #_____

Second #_____

Third #_____

Additional Comments:

_____

_____

C. Did you ever consider dropping out of College yourself?
yes ____ no ____

D. If yes, which of the 17 items listed above might have led you to drop out?

First #_____

Second #_____

Third #_____

Additional Comments:

_____

_____

E. I believe that the following strategies would be effective in reducing student dropout -

(SA) strongly agree (A) agree (NA) neither agree nor disagree (D) disagree (SD) strongly disagree

1. **(SA) (A) (NA) (D) (SD)** • provide academic skills assessment and supportive foundation courses for students identified as underprepared

2. **(SA) (A) (NA) (D) (SD)** • provide counselling related to career and program choice prior to enrollment

3. **(SA) (A) (NA) (D) (SD)** • provide an advisement program whereby each student has a faculty advisor

4. **(SA) (A) (NA) (D) (SD)** • improve the quality of teacher/student interaction in the classroom

5. **(SA) (A) (NA) (D) (SD)** • provide mandatory college and program orientations for all incoming students

6. **(SA) (A) (NA) (D) (SD)** • develop and maintain a comprehensive and integrated tracking system to monitor student progress and achievement and provide appropriate feedback

7. **(SA) (A) (NA) (D) (SD)** • integrate time management, note taking, study skills techniques into individual college courses

8. (SA) (A) (NA) (D) (SD) • provide tutorials and learning centres for students to get extra help outside of class

9. (SA) (A) (NA) (D) (SD) • increase access to social activities and opportunities to make friends at college

10. (SA) (A) (NA) (D) (SD) • improve access to financial aid, scholarships and bursaries

(SA) strongly agree (A) agree (NA) neither agree nor disagree (D) disagree (SD) strongly disagree

11. (SA) (A) (NA) (D) (SD) • improve access to personal counselling

12. (SA) (A) (NA) (D) (SD) • increase on campus part-time job opportunities

13. (SA) (A) (NA) (D) (SD) • provide for ongoing course evaluation and modification which includes student feedback

14. (SA) (A) (NA) (D) (SD) • enhance faculty teaching skills and techniques

15. (SA) (A) (NA) (D) (SD) • develop an organizational culture based on a student-centred focus

F. Considering the 15 items listed above, please indicate which you believe to be the three most important to help students generally to successfully complete college. Please indicate the item numbers as follows:

First #_____

Second #_____

Third #_____

Additional Comments

_____

_____

(A) (B) (C) (D) (E)

G. I believe that faculty are able to predict which students will or will not be successful -

a) within the first 10 days of classes;
b) after the first month of classes;
c) by mid-semester;
d) during the second half of the semester;
e) at the end of the semester.

H. If you could make two important changes to improve student success at Seneca College, what would they be?

_____

_____

Thank you for taking the time to complete this questionnaire.

PLEASE RETURN THE COMPLETED QUESTIONNAIRE TO:

Vicki Milligan, ASAP Coordinator

APPENDIX D

While only three sample pages from the College Student Inventory (CSI) developed by Michael L. Stratil, Ph.D. are included in this Appendix, the full text document is available from the publisher, Noel/Levitz Centers, Coralville, Iowa 52241.

START HERE.

OVERVIEW

Our minds have an immense capacity for knowledge. But **each of us learns in a different way.** We focus attention on somewhat different dimensions of the world, we have somewhat different understandings of the world, and we strive for quite different kinds of personal growth. We can only achieve our full potential when these forces of individuality are meshed smoothly with the learning process.

Your school wishes to help you discover and engage the full richness of your individuality. It would like to see you discover the learning path that best suits your unique personality. Completing the COLLEGE STUDENT INVENTORY ™ is the first step in a carefully designed program to achieve that end. The Inventory is a communication channel between you and your school. It records your thoughts and feelings on many issues related to college. The results will be used in two ways.

First, you will receive a computerized interpretation of your data. Your advisor will discuss these results with you and help you join any follow-up activities that fit your interests and needs.

Second, the general results for your class as a whole will be used to plan a campus-wide program of support services. Staff members will determine how much need exists for certain types of services and how these services can be best provided.

Completing the Inventory and participating in the follow-up activities are entirely voluntary. But I strongly urge you to take advantage of these opportunities. They are likely to have a very beneficial effect on your entire education.

The Inventory has four sections, each with its own set of instructions. So you can gain full benefit from the results, please complete each part as accurately and honestly as you can. It is especially important that you **answer every question** (except where a blank response is allowed). If you change an answer, be sure to fully erase your initial response.

Best wishes for a deep and rewarding experience at college.

Michael L. Stratil

Go now to Part A and read the instructions.

Canadian Version

(Version 1.2, 1989)

PART B

Instructions. The main body of the questionnaire contains 194 questions. The questions in the present section offer various options, which are represented on the answer sheet as numbered circles. Thus, question #1 appears as follows on the answer sheet:

Question #	Options
1	①②③④⑤⑥⑦

Notice that the answer sheet always provides seven circles, even though some questions offer fewer than seven options. Ignore the extra circles.

You are to answer each question by deciding which option is most appropriate to you. Then use your pencil to blacken the circle that corresponds to the option you have chosen.

If you have difficulty in answering any of the questions in this section, see the examiner. Begin with the first question and continue to the end of the section.

1. My graduating class in high school had:

   1) less than 50 students
   2) 50 to 99 students
   3) 100 to 149 students
   4) 150 to 299 students
   5) 300 to 499 students
   6) 500 or more students
   7) none of the above

2. The program of courses that I took in high school was designed primarily to prepare me for:

   1) **a manual trade** (auto mechanics, farming, plumbing, carpentry, manufacturing, etc.)
   2) **a technical trade** (electrical, electronics, data processing, commercial art, medical technician, nursing, etc.)
   3) **secretarial work** (typing, filing, dictation, etc.)
   4) **general commerce** (sales, purchasing, banking, bookkeeping, etc.)
   5) **a post secondary education**
   6) **other**

3. The **average** of all my grades during my **last year of high school** was approximately:

   1) A
   2) halfway between A and B
   3) B
   4) halfway between B and C
   5) C
   6) halfway between C and D
   7) D

   Note: If your school did not use letter grades, do your best to translate your grades into the above system.

4. Based on its general reputation, I would say that my hig school's academic standards were:

   1) far below the average high school
   2) somewhat below the average high school
   3) about equal to the average high school
   4) somewhat above the average high school
   5) far above the average high school

5. Compared to the average high school graduating senior in this country, I consider my academic knowledge (English, math, science, social studies) to be in the:

   1) highest 20%
   2) next to the highest 20%
   3) middle 20%
   4) next to the lowest 20%
   5) lowest 20%

6. In college/university, I am currently (or will be when school starts) a:

   1) first year student
   2) second year student
   3) third year student
   4) fourth year student
   5) graduate student
   6) special (non-degree) student

PART C

Instructions. The present section measures a variety of attitudes related to college/university. Students usually find it to be quite interesting.

As you answer the questions, keep in mind that attitudes are hard to measure. Different individuals often interpret the meaning of a question differently, and a fleeting thought or feeling may influence how one responds.

For these reasons, a good questionnaire should contain a number of similar items about every topic covered. Each item reduces the chances of error. **So please be patient with the questions. Also, don't try to recall your previous responses--just answer each question as spontaneously and naturally as you can.**

Answer each question by selecting **one** number from the following rating scale:

RATING SCALE

NOT AT ALL TRUE	1	2	3	4	5	6	7	COMPLETELY TRUE

Thus, if you agree completely with a statement, you should answer with a "7." Agreement that is fairly strong but not total is indicated by selecting a "5," while agreement that is fairly weak is indicated by "3." Total disagreement is indicated by selecting "1." Use any number between 1 and 7.

Keep in mind that there are no "right" or "wrong" answers. Simply give the answer that best fits you. In answering the questions on study habits and teachers, you should draw primarily on your **pre-college or pre-university experiences.**

Read each question carefully, but do not spend a lot of time on any one question. As before, blacken the appropriate circle on the answer sheet. Give only **one** response for each question.

22. When I think about my career choice, I find that I have very little solid information to go on.

23. Most of my teachers have been very caring and dedicated.

24. Books have never caused me to become very excited.

25. I study all of the assigned readings in my courses.

The next question has a special purpose, which is to confirm that you are putting your answers in the correct position on the answer sheet. There will be others like it throughout the inventory.

When you encounter questions of this type, simply enter the number indicated. For example, select the #2 option for question 26. Please be especially careful with all of these questions.

26. Enter a "2" for this question.

27. I have financial problems that are very distracting and troublesome.

28. It is wise to avoid people with strange and unusual ideas.

29. Often I get so uptight about an exam that I can't concentrate on studying.

30. I would like to talk with someone about the qualifications needed for certain occupations.

31. I often rely on my own ideas when making a decision, and I'm prepared to make an unpopular decision if necessary.

32. I am having a hard time breaking away from my family, and attending college/university is going to make the situation worse.

APPENDIX E

While only three sample pages from the Learning and Study Strategies Inventory (LASSI) developed by Claire E. Weinstein, Ph.D., David R. Palmer, Ph. D., and Ann C. Schulte, Ph.D. are included in this Appendix, the full text document is available from the publisher, H & H Publishing Company, Inc., 1231 Kapp Drive, Clearwater, Florida 34625-2116.

LASSI

Learning And Study Strategies Inventory

1231 Kapp Drive
Clearwater, Florida 34625-2116

by
Claire E. Weinstein, Ph.D., David R. Palmer, Ph.D.
Department of Educational Psychology, University of Texas at Austin
Ann C. Schulte, Ph.D.
University of North Carolina

Directions

The Learning and Study Strategies Inventory (LASSI) is designed to gather information about learning and study practices and attitudes. On the two forms at right, which you pull out to begin the LASSI, you will find 77 statements related to learning and studying. You are to read each statement and then mark a response according to the following key:

- Not at all typical of me
- Not very typical of me
- Somewhat typical of me
- Fairly typical of me
- Very much typical of me

To help you decide which responses to mark, we would like to explain what is meant by each term.

By **Not at all typical of me**, we do not necessarily mean that the statement would never describe you, but that it would be true of you only in rare instances. Mark an **a** for this response.

By **Not very typical of me**, we mean that the statement generally would not be true of you. Mark a **b** for this response.

By **Somewhat typical of me**, we mean that the statement would be true of you about half the time. Mark a **c** for this response.

By **Fairly typical of me**, we mean that the statement would generally be true of you. Mark a **d** for this response.

By **Very much typical of me**, we do not necessarily mean that the statement would always describe you, but that it would be true of you almost all the time. Mark an **e** for this response.

Please completely darken the appropriate letter. For example, darken the **d** if you feel that the statement is fairly typical of you.

a b c ■ e

Try to rate yourself according to *how well the statement describes you*, not in terms of how you think you should be or what others do. There are no right or wrong answers to these statements. Please work as quickly as you can without being careless and *please complete all the items.*

Both of the forms at right, along with the Directions booklet are two-part, carbonless forms. Take care *not* to stack any of the forms on top of the other when writing since it would damage the forms below.

After reading the directions, tear out *both* two-part forms at right and set this booklet aside. The forms contain the statements you will respond to. This booklet contains information which will be used after you complete the LASSI.

Very much typical of me
Fairly typical of me
Somewhat typical of me
Not very typical of me
Not at all typical of me

39. I am unable to concentrate well because of restlessness or moodiness. a b c d e
40. I try to find relationships between what I am learning and what I already know. a b c d e
41. I set high standards for myself in school. a b c d e
42. I end up "cramming" for almost every test. a b c d e
43. I find it hard to pay attention during lectures. a b c d e
44. I key in on the first and/or last sentences of most paragraphs when reading my text. a b c d e
45. I only study the subjects I like. a b c d e
46. I am distracted from my studies very easily. a b c d e
47. I try to relate what I am studying to my own experiences. a b c d e
48. I make good use of daytime study hours between classes. a b c d e
49. When work is difficult I either give up or study only the easy parts. a b c d e
50. I make drawings or sketches to help me understand what I am studying. a b c d e
51. I dislike most of the work in my classes. a b c d e
52. I have trouble understanding just what a test question is asking. a b c d e
53. I make simple charts, diagrams, or tables to summarize material in my courses. a b c d e
54. Worrying about doing poorly interferes with my concentration on tests. a b c d e
55. I don't understand some course material because I don't listen carefully. a b c d e
56. I read textbooks assigned for my classes. a b c d e
57. I feel very panicky when I take an important test. a b c d e
58. When I decide to study, I set aside a specific length of time and stick to it. a b c d e
59. When I take a test, I realize I have studied the wrong material. a b c d e

Very much typical of me
Fairly typical of me
Somewhat typical of me
Not very typical of me
Not at all typical of me

60. It is hard for me to decide what is important to underline in a text. a b c d e
61. I concentrate fully when studying. a b c d e
62. I use the chapter headings as a guide to identify important points in my reading. a b c d e
63. I get so nervous and confused when taking an examination that I fail to answer questions to the best of my ability. a b c d e
64. I memorize grammatical rules, technical terms, formulas, etc., without understanding them. a b c d e
65. I test myself to be sure I know the material I have been studying. a b c d e
66. I put off studying more than I should. a b c d e
67. I try to see how what I am studying would apply to my everyday living. a b c d e
68. My mind wanders a lot when I study. a b c d e
69. In my opinion, what is taught in my courses is not worth learning. a b c d e
70. I go over homework assignments when reviewing class materials. a b c d e
71. I have difficulty adapting my studying to different types of courses. a b c d e
72. Often when studying I seem to get lost in details and "can't see the forest for the trees." a b c d e
73. When they are available, I attend group review sessions. a b c d e
74. I tend to spend so much time with friends that my coursework suffers. a b c d e
75. In taking tests, writing themes, etc. I find I have misunderstood what is wanted and lose points because of it. a b c d e
76. I try to interrelate themes in what I am studying. a b c d e
77. I have difficulty identifying the important points in my reading. a b c d e

Plot Your Scores - *Student's Copy*

Name: _____
Date: _____
I.D.# _____

The chart below is used to interpret the scores you calculated on page 2 of this booklet. Each column of the table below is labeled using the three-letter codes. Copy your scores from page 2 into the space provided for each scale. Find your score on the scale directly above each scale code and place an X over this number. Do this for each scale.

For example, if your ATT score was 29, find the number 29 on the set of numbers just above the ATT scale name and place an X over the 29, as shown in the example below.

40	31
35	30
30	~~29~~
25	--

If you cannot find your exact score, place an X over the next lowest number. When you have finished all 10 scale scores, connect the X's to see your learning and study strategies profile.

The columns on the far left and far right of the chart show percentiles. You can use these percentiles to look at your scores in relation to other college students answering the same items.

Each of the three-letter codes indicates a category of learning and study strategies or methods. The meanings of the codes are:

- ATT • attitude and interest
- MOT • motivation, diligence, self-discipline, and willingness to work hard
- TMT • use of time management principles for academic tasks
- ANX • anxiety and worry about school performance
- CON • concentration and attention to academic tasks
- INP • information processing, acquiring knowledge, and reasoning
- SMI • selecting main ideas and recognizing important information
- STA • use of support techniques and materials
- SFT • self testing, reviewing, and preparing for classes
- TST • test strategies and preparing for tests.

99	39	39	39	39	38	39	25	38	39	39	99
95	38	38	33	36	34	36	23	33	33	37	95
90	37	37	32	34	32	34	22	31	32	35	90
85	36	36	30	33	31	32	21	30	30	34	85
80	35	35	29	32	30	31	--	29	29	33	80
75	**--**	**--**	**28**	**31**	**29**	**30**	**20**	**28**	**--**	**--**	**75**
70	34	34	27	30	--	29	--	27	28	32	70
65	--	33	26	29	28	--	19	26	27	--	65
60	33	32	25	28	27	28	--	--	--	31	60
55	--	--	24	27	26	27	--	25	26	--	55
50	**32**	**31**	**23**	**26**	**25**	**--**	**18**	**--**	**25**	**30**	**50**
45	--	30	22	25	24	26	--	24	--	29	45
40	31	--	21	24	23	25	17	23	24	--	40
35	30	29	20	23	22	24	--	--	23	28	35
30	29	28	19	22	21	23	16	22	22	27	30
25	--	27	18	21	20	22	--	21	21	26	25
20	28	26	17	20	19	21	15	20	20	25	20
15	27	25	15	19	18	20	14	19	19	24	15
10	25	23	14	17	16	19	13	18	18	22	10
05	23	20	12	15	13	17	11	16	16	19	05
01	19	17	09	12	10	14	08	13	12	14	01
	$\overline{\text{ATT}}$	$\overline{\text{MOT}}$	$\overline{\text{TMT}}$	$\overline{\text{ANX}}$	$\overline{\text{CON}}$	$\overline{\text{INP}}$	$\overline{\text{SMI}}$	$\overline{\text{STA}}$	$\overline{\text{SFT}}$	$\overline{\text{TST}}$	

APPENDIX F

INDIVIDUALIZED ADVISEMENT SESSION

Student's Name _____ *Date* _____

Advisor's Initials _____

___ student initiated
___ advisor initiated

Comments: _____
_____
_____
_____
_____
_____

Action Taken: _____
_____
_____
_____

indad.frm

APPENDIX G - PART 1

A STUDENT ALERT PROJECT (ASAP)
PHASE 4 - EVALUATION

INTERVIEW SHEET - PSY 585 FACULTY

1. What is your opinion of the Noel/Levitz CSI as a diagnostic instrument for early identification and intervention for students at risk of dropping out?

2. What is your opinion of the LASSI as a diagnostic instrument for early identification and intervention for students at risk of dropping out?

3. In your opinion, did the feedback to students as a result of the CSI and/or LASSI result in any positive action on the part of those students?

4. Based on your observations, would you consider the use of one or both of these diagnostic instruments in your PSY 585 course to help students succeed at Seneca?

5. What is your opinion of the preliminary intervention activities undertaken as part of the ASAP?

   (a) Noel/Levitz student report

   (b) LASSI student report

   (c) Description of the LASSI scales and Recommendations for Action

   (c) Schedule of Student Resources

6. Did any of your PSY 585 students discuss their CSI or LASSI reports directly with you?

7. In your opinion, would a structured student advisement program improve student success within the School of Computer Studies? Comments.

8. Other Comments?

APPENDIX G - PART 2

A STUDENT ALERT PROJECT (ASAP)
PHASE 4 - EVALUATION

INTERVIEW SHEET - COUNSELLORS & ADMINISTRATORS

1. What is your opinion of the Noel/Levitz CSI as a diagnostic instrument for early identification and intervention for students at risk of dropping out?

2. What is your opinion of the LASSI as a diagnostic instrument for early identification and intervention for students at risk of dropping out?

3. In your opinion, did the feedback to students as a result of the CSI and/or LASSI result in any positive action on the part of those students?

4. What is your opinion of the preliminary intervention activities undertaken as part of the ASAP?

   (a) Noel/Levitz student report

   (b) LASSI student report

   (c) Description of the LASSI scales and Recommendations for Action

   (c) Schedule of Student Resources

5. Did any of your PSY 585 students discuss their CSI or LASSI reports directly with you?

6. In your opinion, would a structured student advisement program improve student success within the School of Computer Studies? Comments.

7. Other Comments?

APPENDIX G - PART 3

A STUDENT ALERT PROJECT (ASAP)
PHASE 4 - EVALUATION

STUDENT FOCUS GROUP

1. What is your opinion of the

   (a) LASSI

   (b) Noel/Levitz CSI

2. Did you take any action based on the results of the LASSI or Noel/Levitz CSI? If yes, what action did you take?

3. What is your opinion of the preliminary intervention activities undertaken as part of the ASAP?

   (a) Noel/Levitz student report

   (b) LASSI student report

   (c) Description of the LASSI scales and Recommendations for Action

   (d) Schedule of Student Resources

4. Did you discuss your CSI or LASSI reports with your PSY 585 professor? If yes, did you initiate the contact or did the professor?

5. Generally, what is your opinion of an early identification and intervention program using an instrument such as the LASSI or CSI? Do you think it might help students to succeed?

6. In your opinion, would a structured student advisement program improve student success within the School of Computer Studies? Comments.

7. Other Comments?

APPENDIX H

From: R. Ogilvie, Chair,
Standing Subcommittee on Research with Human Participants

To: V. Milligan & M. Kompf

Date: 5 June 1992

The Brock University Standing Subcommittee on Research with Human Participants has reviewed the research proposal:

Predicting the potential of early identification and intervention for student retention in a course of applied arts and technology

The Subcommittee finds this proposal to conform to the Brock University guidelines for ethical research.

APPENDIX I

SENECA COLLEGE OF APPLIED ARTS AND TECHNOLOGY

INTER-OFFICE MEMORANDUM

TO: Vicki Milligan

FROM: Brian Adamson
Dean, Academic Planning

DATE: September 19, 1991

RE: ***Research Project Approval***

Thank you for your request and submission of your project outline. The College approves the request as stated and it is our understanding that you and Dean Tilly have reached agreement on financial support arrangements.

Please do not hesitate to contact me should you require further support or assistance.

Brian

BA/cm

APPENDIX J

A STUDENT ALERT PROJECT (ASAP)

Don Mills Campus
Room 149

Thursday, August 29, 1991
9:30 a.m. - 12:30 p.m.

AGENDA

1. Purpose of Project (see attached)

2. Profile of Student Attrition Problem at Seneca

3. Diagnostic Instruments
   - -Noel/Levitz
   - -LASSI
   - -SACQ

4. Retention Management System
   - -student advisement
   - -tracking and monitoring system

5. Student Services
   - -Admissions/ Financial Aid
   - ✓Counselling/Special Needs
   - ✓Student Life/Activities
   - ✓Academic Support
   - -Education and Employment Equity
   - ✓Library Resources

6. Review Critical Path (see attached)

7. Lunch

APPENDIX K

A STUDENT ALERT PROJECT (ASAP)

PRELIMINARY FACULTY INFORMATION MANUAL

TABLE OF CONTENTS

APPENDIX L

SENECA COLLEGE OF APPLIED ARTS & TECHNOLOGY
SCHOOL OF COMPUTER STUDIES

A STUDENT ALERT PROJECT (ASAP)

A Student Alert Project (ASAP) is a study of intervention strategies and resources designed to improve student success within the School of Computer Studies at Seneca College. *The purpose of the study is to identify the individual motivations, attitudes, interests, and needs of first-semester Computer Studies students so that, where appropriate, support can be given to increase student success.*

Student participation in this study is strictly voluntary, and students may withdraw from the study at any time, without prejudice. The confidentiality of the information gathered as a result of the questionnaires completed by students will be maintained at all times by the ASAP Coordinator and the faculty advisors. Information will only be released to faculty advisors with the consent of the participating students. Where possible, all records will be computerized, and once stored in computerized form, all data will be shredded. Otherwise, personal student data will be kept in locked storage for five years, after which time it will be shredded.

The study will field test prominent identification/ intervention instruments, particularly the Noel/Levitz College Student Inventory (CSI) and the Learning and Study Strategies Inventory (LASSI).

Students will be asked to complete a questionnaire* for purposes of learning more about them and their needs in order to assist them to succeed at college. The results of the questionnaires will be used, with the students' consent, by the ASAP Coordinator and faculty advisors to identify those students most in need of the assistance of a faculty advisor. Faculty advisors will meet with students to discuss the results of the questionnaire and to provide ongoing advisement, where appropriate and where desired by the students.

**one-third of the sample completes the LASSI instrument; one-third the NOEL/LEVITZ instrument; and one-third both the LASSI and NOEL/LEVITZ instruments*

STUDENT ADVISEMENT PROGRAM

A student advisement program is the major intervention strategy to be implemented as part of this study. Based on the results of the questionnaires mentioned above, where appropriate and where desired by students, they will be assigned to faculty advisors. The role of faculty advisor will be to meet with those students in order to explain the results of the questionnaires and to assist students to access the college resources available to help them succeed.

The personal information required on the questionnaires is collected under the legal authority of the Colleges and Universities Act, R.S.O. 1980, c. 272, s.5; R.R.O. 1980, Reg. 640, and will be used for identification and intervention measures by the College as explained in this document. For further information concerning the collection of this information please contact Vicki Milligan, ASAP Coordinator, Seneca College, 1750 Finch Avenue East, North York, Ontario M2J 2X5.

APPENDIX M

SENECA COLLEGE OF APPLIED ARTS & TECHNOLOGY
SCHOOL OF COMPUTER STUDIES

A STUDENT ALERT PROJECT (ASAP)

SCRIPT - ORAL INFORMATION TO STUDENTS

General

My name is Vicki Milligan. I am an administrator with Seneca College and I am presently on sabbatical from the college in order to undertake a research study to complete the thesis requirements for my M.Ed. This study has been approved by the Seneca College Executive Committee, the Dean and the Chair of the School of Computer Studies, and the faculty involved. In order for the study to be successful, it is important to have as great as possible participation by first-semester Computer Studies students.

I chose this topic for my research study because I am sincerely interested in helping you to have a satisfying and successful experience while you are here at Seneca and because I have confidence in your ability to succeed. Our goal is to help you become independent learners which will benefit you not only in college but later on the job as well.

I have given you a two-page description of this study which explains what it is, why, when, and how it is being done, and what the anticipated outcomes are. Please be sure to note that this description continues on the reverse side of the page you have in front of you.

Although I do not currently have specific statistics, it appears that as many as 50 to 60% of the students who begin Computer Studies programs here at Seneca do not continue successfully until graduation. The purpose of this study is to learn more about you early in the first semester in order to assist you to be successful here. This will be done through your completion of one or two questionnaires and through a student advisement program as explained in the handout.

Your participation in this study is strictly voluntary and you may withdraw from the study at any time. The study will continue throughout the Fall semester. All personal information gathered during the study will be treated as confidential and will only be released to a faculty advisor with your consent. The results of the questionnaires will not become part of your official college records and will in no way adversely affect your status or standing.

If you have questions at any time regarding the study or your role in it, I will be available through the main Computer Studies office here at the Don Mills Campus.

(Note: one-third of the students complete the Noel/Levitz CSI, one-third complete the LASSI, and one-third complete both instruments.)

Noel/Levitz College Student Inventory

You have before you a questionnaire called the College Student Inventory (CSI), a computerized answer sheet, and a special lead pencil. It usually takes approximately one hour to complete the questionnaire but you may have as much time as you need. Once all the questionnaires have been completed, I will be sending them to the Noel/Levitz Center in Iowa where they will be analyzed by computer. I should have the results for you within two weeks time.

This questionnaire has been carefully designed and validated so that all categories of entering students can benefit from it. However, it is impossible to write questions that will fit everyone exactly. Students who have been out of school for a long period of time may encounter a few questions that will not correspond very well with their situation. Please try to understand the intent of such questions and then answer in whatever way you think best describes your circumstances. I will be happy to assist you in interpreting any of the questions.

You can begin by reading the overview on page 1 of the questionnaire which will give you more information about it (copy of overview attached). Please be sure to use the pencil provided and please do not write in the booklet as they will be used by other students. Copy your answers onto the computerized answer sheet provided in the manner explained in the booklet. There are four sections to be completed with specific instructions at the beginning of each. Please answer the questions as openly and honestly as you can.

As you fill in the bubbles on the answer sheet with the pencil I have provided, please be sure to fill in all of the chosen circle without extending beyond the boundaries of the circle. The computer will automatically insert a standard response if you leave a question blank or make an unreadable mark so it is better to make it clear what you intend the answer to be.

Please turn to the last page of the booklet which is Part D. Note that question #194 is where you give your consent to release the results of this questionnaire to a faculty

advisor. If you say "yes", and it is appropriate, your faculty advisor will contact you to meet with him or her.

If anyone would prefer not to participate in this study, you can indicate this to me by coming forward now or as I come around the room.

After you have read the overview, please complete Part A, including your Seneca number instead of your social insurance number. Then proceed to complete Parts B, C, and D of the questionnaire. Once you have finished, please check your answer sheet over carefully to make sure you have answered all questions and return all materials to me except the one-page description of the ASAP study.

Thank you for taking time to participate in this part of the study.

Learning and Study Strategies Inventory

You have before you a questionnaire called the Learning and Study Strategies Inventory (LASSI). It usually takes approximately 25 to 30 minutes to complete and score the LASSI but you may take as much time as you need.

This questionnaire has been carefully designed and validated so that all categories of entering students can benefit from it. However, it is impossible to write questions that will fit everyone exactly. Please try to understand the intent of the questions and then answer in whatever way you think best describes your circumstances. I will be happy to assist you in interpreting any of the questions.

The purpose of your completing the LASSI questionnaire is to provide us with information about your learning and study practices and attitudes that will assist us to help you succeed here at Seneca.

If anyone would prefer not to participate in this study, you can indicate this to me by coming forward now or as I come around the room.

Start by printing your name, today's date, and your Seneca Student Number at the top of page 3. Make sure this information goes through onto page 4 as well. Then continue by reading the directions on the front of the questionnaire. Remove pages 2 - 5 from the booklet and set the remainder of the booklet aside until later. Please answer the 77 questions by darkening or circling the letter (a,b,c,d,e) that best describes you. It is important that you rate yourself as openly and honestly as possible and not as you think you should be. Once you have finished, please review

the questions to ensure they have all been answered. You can then read the scoring directions but please don't begin the scoring until I have discussed it with you.

Scoring - This questionnaire is self-scoring which means you can determine the results yourself. If you have not already done so, please read the scoring directions on page 2. (Use overheads of the scoring forms here to help explain the procedure for scoring the instrument.)

Now that you have transferred the total scores from page 2 to page 3 of the questionnaire, you can plot your scores for each of the ten categories explained on page 3. (Review these with the students and again demonstrate the procedure through the use of overheads.) Any score that you have above the cluster of numbers with a "75" at either side indicates that you have a strength in this category. Any score that you have below the cluster of numbers with a "50" at either side indicates that you could use some help in this area. The plotting of your scores gives you a profile of your learning and study practices and attitudes and helps you identify areas that need attention.

Once you have finished scoring the questionnaires, please return all pages to me. Would you also please complete and return to me the authorization form I have provided by printing your name, Seneca #, and date, and indicating whether the information gathered by this questionnaire may be released to a faculty advisor. Your copy of the results will be returned to you either during a further class discussion or, with your consent, during an individual discussion with a faculty advisor.

Thank you for participating in this part of my study and good luck with your own studies.

PART D

Instructions. The present section measures your current impressions of your institution. It is recognized that most of the students completing this questionnaire have had little or no direct contact with their institution, so they do not have well formed impressions. But everyone comes to a college/university with at least some knowledge--which is acquired from calendars, the institution's general reputation, the reports of friends, preliminary contacts, and so forth.

So if you have just arrived on campus, don't let this fact bother you. Just give your **initial impressions.**

Each question describes a different characteristic. You are to rate how you currently feel about your institution in relation to these characteristics. Answer by selecting a number from the following scale:

VERY DISSATISFIED	1	2	3	4	5	6	7	VERY SATISFIED

You may select any number from 1 to 7. As before, blacken the appropriate circle on the answer sheet. Blacken only one circle for each question.

180. The location of the institution.

181. The kinds of academic courses and majors available.

182. The variety and quality of food available (both on- and off-campus).

183. The cost of tuition, housing, and food.

184. The condition and appearance of buildings and grounds.

185. The general characteristics of the student body.

186. The entertainment available at or near the institution.

187. The adequacy of financial aid.

188. Enter a "2" for this question.

189. The intercollegiate athletic program.

190. The faculty in general.

191. The social life (both on- and off-campus).

192. Shopping facilities at or near the institution.

193. My living arrangements while attending the institution (whether at home, in a residence hall, or in an apartment).

NOTE that the following is not a rating question. Select option 1 if you agree with the statement; select option 2 if you do not.

194. I authorize the ~~counseling center~~ ASAP Coordinator at my institution to se the student and advisor reports from this inventory to my academic advisor, who will help me ~~select courses and~~ make ~~other~~ educational decisions:

1) YES

2) NO (If you select this option, all of your reports will be kept on file at your counseling center (or its equivalent); as soon as the Student Report is available, you will be able to obtain it from that office.)

CHECK TO MAKE SURE THAT YOU HAVE ANSWERED EVERY QUESTION IN THIS SECTION (QUESTIONS 180 TO 194). ANSWER ANY THAT HAVE BEEN LEFT BLANK.

THEN RETURN THE QUESTIONNAIRE AND THE ANSWER SHEET TO THE EXAMINER.

THANK YOU!

APPENDIX O

SENECA COLLEGE OF APPLIED ARTS & TECHNOLOGY
SCHOOL OF COMPUTER STUDIES

A STUDENT ALERT PROJECT (ASAP)

AUTHORIZATION TO RELEASE INFORMATION

I authorize Vicki Milligan, ASAP Coordinator, Seneca College, to release the results of the Learning and Study Strategies Inventory (LASSI) to my faculty advisor who will maintain the confidentiality of this information.

Yes _____ No _____

_____ _____
Student Name (Please print clearly) Date

_____
Student Signature

APPENDIX P

COLLEGE STUDENT INVENTORY
Student Report

[redacted] - Freshman
Female, Age 19, ID# [redacted]
Seneca College
September 19, 1991

INSTRUCTIONS

Sharon, this is an interpretive report of your responses to the College Student Inventory. Its purpose is to help you identify your special interests and needs. The percentile ranks show how you compare to a larger sample of college freshman from across the country. Specifically, they indicate the percentage of students whose scores are equal to or less than yours. Since they are based on questionnaire information alone, they may give only a rough indication of your true attitudes. Your advisor or counselor will help you understand your scores and find the services you desire.

SPECIFIC RECOMMENDATIONS

The following list of recommended actions is based on an analysis of all your responses. Give serious thought to taking these actions, as they will help you succeed in college. The strength of each recommendation is indicated by its priority score in parentheses. The highest possible priority is 10, and the lowest is 0. Priorities greater than 8.0 indicate very urgent needs.

a. Get information about fraternities/sororities (8.6)
b. Get information about student activities (8.6)
c. Get help in meeting new friends (8.6)
d. Get help in selecting an academic program (8.5)
e. Discuss roommate problems with counselor (8.4)
f. Get help with writing skills (8.3)
g. Get help with exam skills (8.3)
h. Get help with study habits (8.3)
i. Get help in selecting an occupation (8.2)
j. Discuss the qualifications for occupations (8.2)

MOTIVATIONAL ASSESSMENT	Percentile Rank	Very Low VL	L	Ave A	H	Very High VH
Academic Motivation						
Study Habits	20	X				
Intellectual Interests	17	X				
Academic Confidence	29		X			
Desire to Finish College	47			X		
Attitude Toward Educators	17	X				
Social Motivation						
Self-Reliance	36		X			
Sociability	62				X	
Leadership	94					X
General Coping						
Ease of Transition	78				X	
Family Emotional Support	8	X				
Openness	89					X
Career Planning	37		X			
Sense of Financial Security	96					X
Receptivity to Support Services						
Academic Assistance	75				X	
Personal Counseling	78				X	
Social Enrichment	89					X
Career Counseling	87					X
Internal Validity	Excellent					

STUDENT BACKGROUND INFORMATION

High School Academics
Sr. Yr. GPA: **C+ average**
Class size: **50-99**
Program: **college prep**
Perceived Stds: **average**

Noncredit Activities

Athletics	**yes**
Fine Arts	**yes**
Leadership	**yes**
Misc. groups	**yes**
Oral expr.	
Science	
Written expr.	

Family Background
Native lang.: **English**
Racial origin: **Black**
Mother's educ.: **some college**
Father's educ.: **some college**
Status: **single, no plans**
Miles from family: **0-9**

Admissions Test Scores
ACT Composite: **n/a**
SAT (V+M): **n/a**

College Experience
Housing: **parents' home**
Degree sought: **associate's**
Plans to study: **15 hrs/week**

WRITTEN INTERPRETATION

In the present section, you will receive a more detailed explanation of your results. The purpose of this information is to help you grow and get the most out of your college experience. In thinking about it, try to take a balanced approach. On the one hand, do not assume that each statement is perfectly accurate just because it is printed in a formal manner; some statements may not fit you very well. But on the other hand, do not dismiss a statement merely because it points to a problem.

You should thus keep an open mind. Examine each statement in light of the full range of knowledge that you have about yourself. When it seems accurate, give serious consideration to any suggestions that accompany it. If it is puzzling, you may want to discuss it with someone who can help you interpret it. When approached in this way, the information will be very helpful to you.

ACADEMIC MOTIVATION

1. Study Habits measures the amount of time and effort that you put into your studies. Your score placed you in the 20th percentile. Weak study habits are the single greatest cause of academic problems in college, and you probably need to put more effort into this area. As soon as possible, develop a clear daily routine in which you set aside certain periods of time to study. Learn to focus your attention and to pace yourself effectively. Other useful techniques include thoughtful previewing, underlining, note-taking, and reviewing. Academic counselors can help you develop your study habits.

2. Intellectual Interests measures the degree to which you enjoy reading and discussing serious ideas. Your score placed you in the 17th percentile. You appear to be much more comfortable with straight-forward practical problems than with abstract thinking. This is quite natural. But some very important dimensions of the adult world can only be understood through words, numbers, and formal knowledge. So try to develop greater interest in this area of life; it can be very rewarding.

3. Academic Confidence measures the degree to which you feel capable of doing well in college. Your score placed you in the 29th percentile. This suggests that you have some moderately strong self-doubts. These may not be based on your actual potential, but rather on some bad experiences in school. Since greater confidence often leads to greater success, you would probably benefit from talking with someone who can help you put your earlier learning experiences into perspective.

4. Desire to Finish College measures the strength of your commitment to completing a degree. Your score placed you in the 47th percentile. This suggests that you have a fairly strong commitment to the value of a college education. But if your commitment begins to waver, try to clarify your objectives. Often a clear decision about one's career goals strengthens one's commitment to college. A counselor can be very helpful in guiding you through this process.

5. Attitude toward Educators measures the degree to which you see teachers and administrators as competent, reasonable, and caring. Your score placed you in the 17th percentile. These negative perceptions probably make it very difficult for you to accept your teachers, and that hurts your attention and effort in school. If you try getting to know your teachers, you will find that most are warm and helpful. You may also want to talk with a counselor, who might be able to help you understand your feelings toward educators.

SOCIAL MOTIVATION

1. Self-Reliance measures the degree that you trust your own judgment and make your own decisions. Your score placed you in the 36th percentile. Low self-reliance can express itself in various ways: spending too much time seeking companionship; going along with social activities that violate your values; feeling uncomfortable with the solitude of studying. A counselor can help you learn to resist outside pressures and to rely more heavily on your inner resources.

2. Sociability measures your desire for companionship and social entertainment. Your score placed you in the 62nd percentile. An above-average level of sociability has the advantage of motivating you to establish friendships and spend a lot of time with other people. But it can distract you from the main purpose of college, which is learning. Try to keep your social life within reasonable bounds.

3. Leadership measures the degree to which you feel accepted as a leader. Your score placed you in the 94th percentile. You appear to be highly respected by other peo-

ple. If you wish an opportunity to apply these skills in your present environment, consider assuming some responsibilities in a student organization.

GENERAL COPING

1. Ease of Transition measures the degree to which you feel comfortable with the various changes brought on by college life. Your score placed you in the 78th percentile. This suggests that you are experiencing only a mild amount of stress at the present time.

2. Family Emotional Support measures the satisfaction you feel with the communication that occurs in your family. Your score placed you in the 8th percentile. The high level of stress indicated by this score may be producing some negative effects on other areas of your life. It is hard to concentrate on school, for example, if one is preoccupied with family problems. A personal counselor can help you understand your family situation and discover some solutions.

3. Openness measures your receptivity to new ideas and to the sensitive, sometimes threatening, aspects of our complex world. Your score placed you in the 89th percentile. This suggests that you will probably feel very comfortable with the unfamiliar and unconventional ideas often found at college.

4. Career Planning measures the amount of serious thought you have given to your career choice. Your score placed you in the 37th percentile. This suggests that you need to give more careful thought to the type of work you value and enjoy, to the current availability of jobs for college graduates, and to the specific training you will need to find a satisfying job. The career planning office on your campus can be very helpful with these tasks.

5. Sense of Financial Security measures your satisfaction with the amount of money available to you while attending college. Your score placed you in the 96th percentile. You appear to feel very satisfied with your financial situation.

RECEPTIVITY TO SUPPORT SERVICES

1. Receptivity to Academic Assistance measures your interest in receiving help with your academic skills. Your score placed you in the 75th percentile. Given the overall pattern of your needs, you are encouraged to follow through on your desire to get help in this area. These services will be very useful to you.

2. Receptivity to Personal Counseling measures your interest in receiving counseling for personal matters. Your score placed you in the 78th percentile. Since you have indicated that some areas of stress exist in your life, you may wish to reconsider the value of this type of service. It could be much more useful than you expect.

3. Receptivity to Social Enhancement measures the degree to which you would like some help getting involved in social activities on campus. Your score placed you in the 89th percentile. Your advisor can give you advice and direction concerning the areas of social activity that interest you.

4. Receptivity to Career Counseling measures your interest in receiving counseling for vocational matters. Your score placed you in the 87th percentile. Your strong interest in learning more about career opportunities is very healthy. Visit the career planning office soon; it can provide a number of useful services.

MISCELLANEOUS

Internal Validity measures your carefulness in responding to this inventory, as indicated by the special items that asked you to enter a predetermined response. Your score was excellent. This suggests that you followed the instructions very carefully.

Note: If at any time you prefer greater privacy regarding your CSI reports, you may ask your advisor to either (a) return his or her copy to your counseling center or (b) give it to you.

APPENDIX Q

COLLEGE STUDENT INVENTORY
Advisor/Counselor Report

*** RESTRICTED TO COUNSELING STAFF ***
[redacted] - Freshman
Female, Age 19, ID# [redacted]
Seneca College
September 19, 1991

INSTRUCTIONS

This is a report of Sharon's results. Please give her a thorough explanation of her student copy. If you agree with the recommendations, gently encourage her to follow them. When possible, try to make the arrangements yourself as a way of reducing motivational barriers. But avoid attempting any psychological counseling if not professionally trained for such work. Above all be sure to protect the confidentiality of the present report. Please see the RMS Interpretive Guide for Advisors and Counselors for more details.

SUMMARY OF ACADEMIC MOTIVATION

Summary scores are expressed on a stanine scale: 9 is very high, 5 is average, and 1 is very low.

- * Dropout Proneness 8
- * Predicted Academic Difficulty 5
- * Educational Stress 3
- * Receptivity to Institutional Help 8

For greater detail, see Motivational Assessment.

Notice

To protect the student's privacy, she should be allowed to recover and remove this report at any time

SPECIFIC RECOMMENDATIONS FOR SHARON

The strength of each recommendation is indicated by its priority score in parentheses (0 = low, 10 = high):

a. Get information about fraternities/sororities (8.6)
b. Get information about student activities (8.6)
c. Get help in meeting new friends (8.6)
d. Get help in selecting an academic program (8.5)
e. Discuss roommate problems with counselor (8.4)
f. Get help with writing skills (8.3)
g. Get help with exam skills (8.3)

MOTIVATIONAL ASSESSMENT	Percentile Rank	Very Low VL	L	Ave A	H	Very High VH
Academic Motivation						
Study Habits	20	X				
Intellectual Interests	17	X				
Academic Confidence	29		X			
Desire to Finish College	47			X		
Attitude Toward Educators	17	X				
Social Motivation						
Self-Reliance	36		X			
Sociability	62				X	
Leadership	94					X
General Coping						
Ease of Transition	78				X	
Family Emotional Support	8	X				
Openness	89					X
Career Planning	37		X			
Sense of Financial Security	96					X
Receptivity to Support Services						
Academic Assistance	75				X	
Personal Counseling	78				X	
Social Enrichment	89					X
Career Counseling	87					X
Initial Impression	3	X				
Internal Validity	Excellent					

STUDENT BACKGROUND INFORMATION

High School Academics
Sr. Yr. GPA: **C+ average**
Class size: **50-99**
Program: **college prep**
Perceived Stds: **average**

Noncredit Activities
Athletics **yes**
Fine Arts **yes**
Leadership **yes**
Misc. groups **yes**
Oral expr.
Science
Written expr.

Family Background
Native lang.: **English**
Racial origin: **Black**
Mother's educ.: **some college**
Father's educ.: **some college**
Status: **single, no plans**
Miles from family: **0-9**

Admissions Test Scores
ACT Composite: **n/a**
SAT (V+M): **n/a**

College Experience
Housing: **parents' home**
Degree sought: **associate's**
Plans to study: **15 hrs/week**

Other Indications
Dissatisfied with residence*
Dissatisfied with costs*
Dissatisfied with shopping*
Dissatisfied with location*
Dissatisfied w/entertainment*

This information is not shown on the student's copy
Noel/Levitz Centers, Coralville, Iowa

APPENDIX R

THE RMS COLLEGE SUMMARY AND PLANNING REPORT™

The present report has been designed to further enhance the usefulness of **The RMS College Student Inventory™** (CSI) in retention management. It contains two sections.

The first section presents a statistical summary of your students' responses. This section begins with a report of the means for all the major CSI scales. Because these data are in the form of percentiles based on a national sample, you can readily determine how your students compare to the national norm (which is the 50th percentile on each scale). The data are presented separately for females, males, and all students combined. The remainder of the summary section reports a variety of more detailed information of special interest, such as the average high school grade-point average and the percentage of students planning to complete a four-year degree.

The second section presents a series of lists of students having special needs. One of the lists, for example, contains information about students with high scores on dropout proneness. In addition to providing the names of students and their scores on the primary criterion, each list also reports other information related to the list's general theme. Thus, the dropout list gives the students' scores on predicted academic difficulty and receptivity to institutional help. In this way, each list presents a combination of data that is uniquely valuable in working on a particular aspect of retention management.

All numerical data in the lists are in the form of percentiles except where otherwise indicated. Because different institutions have different needs and strategies, the cutoff point for including students on a list has been set at a moderately selective, rather than highly selective, level. This gives you maximum flexibility in adapting the lists to fit your specific needs. Thus, a full list will typically contain approximately 35% of all students taking the CSI at your institution, which will enable you to identify students with both marginal and severe needs. But if you wish to focus primarily on students with a very high level of need, you can readily do so by circling the names of the students with the highest scores on the criterion. You may find it most effective to work with a full list in some areas and with a shortened list in others. The lists are explained in further detail in **The RMS Coordinator's Manual™** and **The RMS Interpretive Guide for Advisors and Counselors™**.

STATISTICAL SUMMARY
Seneca College
Scanning Date: September 19, 1991

Primary Sample Statistics

Number of females	61
Number of males	118
Number not reporting sex	0
Total number of students	179

Means on Major Scales

	Females	Males	Total
Summary Observations			
Dropout Proneness	56.7	68.4	64.4
Predicted Acad. Difficulty	45.1	56.1	52.4
Educational Stress	65.6	67.7	67.0
Receptivity to Inst. Help	59.6	61.6	60.9
Academic Motivation			
Study Habits	62.5	51.2	55.1
Intellectual Interests	54.8	43.8	47.6
Academic Confidence	41.8	45.6	44.3
Desire to Finish College	43.2	30.5	34.8
Attitude Toward Educators	45.8	35.7	39.1
Social Motivation			
Self-Reliance	35.2	35.6	35.4
Sociability	32.6	29.5	30.5
Leadership	33.0	32.4	32.6
General Coping Scales			
Ease of Transition	45.6	33.9	37.9
Family Emotional Support	37.3	30.0	32.5
Openness	34.0	25.1	28.1
Career Planning	43.1	35.6	38.2
Sense of Finan. Security	48.8	47.2	47.7
Receptivity Scales			
Academic Assistance	58.1	57.1	57.4
Personal Counseling	60.2	63.3	62.3
Social Enrichment	48.9	54.4	52.5
Career Counseling	57.3	59.9	59.0
Supplementary Scales			
Initial Impression	30.1	23.8	26.0
Internal Validity	9.7	9.9	9.8

Note: The statistics for all scales except internal validity were computed from percentile scores. For all of these scales, the national norm is the 50th percentile. High scores indicate high levels of the characteristic described in the scale name (e.g., a high score on self-reliance means that the group was above average in self-reliance). The statistics for internal validity were computed from raw scores (ranging from 0 to 10).

Academic Characteristics	Mean	
Size of Graduating Class	138.27	
Senior-Year Grades	2.65	(on 4-point scale)
Expected Study Time	13.07	(hours per week)
Composite ACT	18.42	(N = 6)
SAT Total	740.00	(N = 3)

Marital Status	
Single, with no plans	56.7%
Single, with close relation.	20.8%
Single, with children	2.8%
Married, without children	9.6%
Married, with children	9.6%
Divorced, without children	0.0%
Divorced, with children	0.6%

Class Standing	
Freshman	92.2%
Sophomore	3.9%
Junior	0.0%
Senior	0.0%
Graduate student	2.2%
Other	1.7%

Type of High School Program	
Manual Trade	4.5%
Technical Trade	16.3%
Secretarial	3.4%
General Commerce	6.7%
College Preparatory	60.1%
Other	9.0%

Participation in Non-Credit Activities in High School
(categories are not mutually exclusive)

Art exhibit or musical, theatrical, or dance production	21.2%
School newspaper, yearbook, magazine, or writing contest	13.4%
Debate team, speech contest, or radio/TV production	7.3%
Scientific research project	5.0%
Member of a special interest, social, honorary, or service org.	22.3%
Member of an athletic team or active in intramural sports	37.4%
Class officer, stu. council, team captain, or other leadership	12.8%

Native Language	
English	38.5%
Spanish	0.6%
French or Italian	1.1%
German or Slavic	4.5%
Arabic	0.6%
Asian	36.9%
Other	17.9%

Racial Origin	
Afro-American (Black)	12.4%
Amer. Indian, Alaskan Nat.	1.7%
Asian-Amer., Pac. Islander	44.1%
Caucasian-American (White)	14.7%
Hispanic-American	2.8%
Other	15.8%
Prefers not to respond	8.5%

Initial Impressions of Institution (7 represents maximum satisfaction)	
Location	4.0
Academic offerings	5.2
Food	4.4
Cost of tuition, housing, food	3.8
Buildings and grounds	5.1
Student body	4.7
Entertainment	3.5
Adequacy of financial aid	3.9
Intercollegiate athletics	4.1
Faculty	4.9
Social life	4.4
Shopping facilities	3.8
Living arrangements	5.1

Mother's Highest Level of Education	
Elementary School	33.7%
Some High School	22.3%
High School Diploma	20.0%
1 to 3 Years of College	16.0%
4-Year College Degree	5.1%
Master's Degree	2.9%
Doctoral Degree	0.0%

Father's Highest Level of Education	
Elementary School	30.1%
Some High School	20.2%
High School Diploma	13.3%
1 to 3 Years of College	20.2%
4-Year College Degree	10.4%
Master's Degree	5.2%
Doctoral Degree	0.6%

Distance to Family Residence	
Less Than 10 Miles	26.4%
10 to 50 Miles	50.6%
51 to 100 Miles	9.0%
101 to 300 Miles	4.5%
301 to 600 Miles	3.4%
More Than 600 Miles	6.2%

Residence While in College	
Residence hall	1.7%
Parents' home	57.5%
Relative's home	10.1%
Own off-campus residence	24.0%
Married student housing	0.0%
Fraternity or sorority	0.0%
Other	6.7%

Highest Degree Sought	
None	0.6%
1-Year Certificate	1.1%
2-Year College Degree	19.9%
4-Year College Degree	51.7%
Master's Degree	18.2%
Doctoral Degree	8.5%

Perceived Academic Standards of the Institution	
Much too high	0.6%
Somewhat too high	3.9%
Slightly too high	20.1%
Just right	65.9%
Slightly too low	6.7%
Somewhat too low	2.8%
Much too low	0.0%

Recommendations

Mean Priority Scores	
6.94	Get help with study habits
7.15	Get help with exam skills
6.75	Get help with writing skills
5.70	Get help with basic math skills
6.74	Get help with reading skills
6.52	Get tutoring in selected areas
5.94	Discuss roommate problems with counselor
6.10	Discuss an unwanted habit with counselor
6.35	Discuss attitude toward school with counselor
6.27	Discuss emotional tensions with counselor
5.84	Discuss family problems with counselor
6.00	Discuss dating and social life with counselor
6.96	Discuss the qualifications for occupations
6.87	Discuss job market for college graduates
6.83	Get help in selecting an occupation
7.07	Get help in selecting an academic program
6.64	Discuss adv/disadvantages of occupations
5.33	Get help in finding a part-time job
5.82	Get help in obtaining a loan
6.02	Get help in obtaining a scholarship
5.50	Get help in finding a summer job
6.92	Get help in meeting new friends
6.79	Get information about student activities
6.86	Get advice and tour from experienced student
6.73	Get information about fraternities/sororities

R = restricted - Y = do not release report to advisor

STUDENTS WITH HIGH DROPOUT PRONENESS

- 101 students out of a sample of 177

Explanation: Students are included on this list if their percentile scores on dropout proneness (abbreviated DROP PRONE) are 65 or higher. Supplementary information is given for predicted academic difficulty (ACAD DIFF) and receptivity to institutional help (REC HELP). In addition, space is available to enter the name of each student's advisor and any referrals that have been made. One approach would be to use the list to track students with high dropout proneness to insure they are receiving the help they need.

R
Jan

Name	DROP PRONE	ACAD DIFF	REC HELP	Advisor	Referrals
	65	33	66	Dennis O'Neill	H
	72	78	59	Janet Mawhinney	O
	97	89	18	Gerry Foley	B
	99	88	78	Gerry Foley	A
	74	71	38	John Legate	J
	84	79	76	Janet Mawhinney	K
	78	64	39	Gerry Foley	B
	82	78	79	John Legate	D
	98	85	93	Dennis O'Neill	H
	80	36	93	Dennis O'Neill	I
	87	48	89	Dennis O'Neill	H
	78	53	36	Gerry Foley	A
	87	65	59	Gerry Foley	B
	99	77	38	Lynda Archer	E
	71	58	83	Janet Mawhinney	K
	97	73	96	Gerry Foley	B
	94	73	99	Gerry Foley	B
	93	84	53	Lynda Archer	E
	71	26	76	Janet Mawhinney	O
	75	15	89	Gerry Foley	B
	68	28	63	Dennis O'Neill	H
	83	70	78	Janet Mawhinney	O
	87	54	55	Dennis O'Neill	H
	70	19	23	Gerry Foley	B
	71	74	49	Gerry Foley	B
	97	95	96	Gerry Foley	B
	97	88	91	Dennis O'Neill	H
	85	89	51	Janet Mawhinney	O
	96	91	32	Dennis O'Neill	H
	95	91	70	Janet Mawhinney	O
	74	20	36	Janet Mawhinney	K
	90	56	91	Gerry Foley	B
	71	50	55	Gerry Foley	A
	98	91	95	Janet Mawhinney	O
	88	56	93	withdrawn	
	~~96~~	~~92~~	~~81~~		
	93	89	94	Lynda Archer	E
	72	61	91	Janet Mawhinney	O
	70	66	93	John Legate	J
	89	64	59	Janet Mawhinney	K
	76	96	27	Lynda Archer	F
	90	33	70	Dennis O'Neill	H
	99	95	96	John Legate	D
	99	95	84	Gerry Foley	B
	91	70	78	John Legate	J
	68	57	81	Janet Mawhinney	O

STUDENTS WITH HIGH DROPOUT PRONENESS

Name	DROP PRONE	ACAD DIFF	REC HELP	Advisor	Referrals
	81	58	71	John Legate	D
	85	54	78	Janet Mawhinney	O
	66	62	63	Janet Mawhinney	O
	85	56	38	Janet Mawhinney	K
	65	53	93	Gerry Foley	A
	80	66	92	Gerry Foley	A
	82	66	73	John Legate	J
	99	99	97	Janet Mawhinney	K
	92	94	97	John Legate	J
	81	77	83	Lynda Archer	E
	87	79	92	Gerry Foley	B
	81	61	99	John Legate	J
	67	53	51	Dennis O'Neill	H
	89	54	53	Gerry Foley	B
	96	98	61	John Legate	D
	91	59	47	Gerry Foley	B
	79	40	66	Gerry Foley	A
	82	75	47	John Legate	J
	99	93	41	Dennis O'Neill	H
	92	75	78	John Legate	D
	85	66	99	Lynda Archer	E
	97	95	84	Lynda Archer	F
	77	68	88	Janet Mawhinney	K
	75	55	66	Janet Mawhinney	K
	84	82	81	John Legate	D
	86	86	78		
	79	70	68	Lynda Archer	F
	99	99	93	Lynda Archer	E
	85	31	21	Dennis O'Neill	H
	66	44	70	Gerry Foley	B
	96	92	59	John Legate	D
	~~69~~	~~10~~	~~27~~		
	91	58	99	Janet Mawhinney	K
	~~69~~	~~12~~	~~57~~		
	99	99	53	Janet Mawhinney	O
	98	99	82	Lynda Archer	F
	76	56	36	Janet Mawhinney	K
	93	72	94	Lynda Archer	F
	95	95	64	Janet Mawhinney	O
	65	45	70	Gerry Foley	A
	89	72	99	John Legate	D
	92	57	89	Dennis O'Neill	H
	67	39	31	Gerry Foley	B
	76	51	75	Gerry Foley	A
	99	94	87	Gerry Foley	C
	97	97	49	Gerry Foley	B
	78	18	70	Gerry Foley	A
	86	89	57	Dennis O'Neill	H
	79	60	61	John Legate	I
	84	41	45	Lynda Archer	E
	72	58	98	Gerry Foley	A
	71	27	47	Lynda Archer	E
	95	92	83	Dennis O'Neill	H
	96	80	61	Janet Mawhinney	O
	73	15	31	John Legate	J

STUDENTS WITH HIGH DROPOUT PRONENESS

Name	DROP PRONE	ACAD DIFF	REC HELP	Advisor	Referrals
	~~78~~	~~38~~	~~81~~		
	98	64	83	Gary Foley	A
	86	76	94	Gerry Foley	B
	73	56	82	Gerry Foley	B
	6	3	5	Gerry Foley	A
	9	8	7	Lynda Archer	E

STUDENTS NEEDING ACADEMIC ASSISTANCE
With a Focus on Their Desire for Specific Academic Services

Explanation: Students are included on this list if their percentile scores on predicted academic difficulty (abbreviated ACAD DIFF) are 65 or higher. Supplementary information is given regarding students' desires for specific forms of academic assistance, including help with study habits (STUDY HABIT), exam skills (EXAM SKILL), writing skills (WRIT SKILL), basic mathematics skills (MATH SKILL), reading skills (READ SKILL), and tutoring (TUTOR). Desires are expressed on a scale of 1 (weakest) to 7 (strongest). One approach would be to select the students with high scores on ACAD DIFF. From the remaining information, one could then identify the specific skills on which these students have the strongest desire for help.

Name	ACAD DIFF	STUDY HABIT	EXAM SKILL	WRIT SKILL	MATH SKILL	READ SKILL	TUTOR
	78	5	6	6	1	6	2
	71	6	7	7	1	3	7
	89	2	7	5	7	4	1
	88	6	6	5	4	5	4
	71	3	7	5	1	5	5
	79	6	7	6	4	4	4
	78	6	7	7	2	5	5
	85	7	6	6	1	7	7
	65	3	5	3	1	5	3
	77	4	6	2	5	4	3
	73	7	7	7	6	7	6
	73	7	7	7	5	7	5
	84	3	4	7	2	5	5
	89	5	6	3	4	2	2
	70	7	5	4	2	5	5
	74	5	4	2	1	4	2
	95	7	6	7	5	7	7
	88	4	4	5	4	6	6
	89	7	7	5	5	5	4
	91	5	7	5	6	7	6
	91	5	7	7	1	5	7
	91	7	7	7	2	7	6
	92	7	6	1	6	1	7
	89	7	6	6	5	6	6
	77	5	6	4	7	4	7
	66	7	7	7	2	7	5
	72	5	7	7	3	7	5
	96	4	2	4	3	3	3
	95	7	7	6	1	7	6
	95	7	4	7	2	5	3
	70	6	4	6	1	5	5
	66	5	5	3	7	1	1
	66	7	7	7	1	7	7
	66	6	6	3	2	6	4
	99	7	7	7	7	7	7
	94	7	5	7	7	7	7
	77	4	7	6	1	6	5
	79	5	6	7	1	7	6
	98	7	7	6	2	5	6
	75	6	6	5	1	5	3
	93	5	4	3	6	7	7
	75	5	5	5	3	6	5
	66	7	7	7	4	7	7
	95	7	7	5	1	7	7

STUDENTS NEEDING ACADEMIC ASSISTANCE

With a Focus on Their Desire for Specific Academic Services

Name	ACAD DIFF	STUDY HABIT	EXAM SKILL	WRIT SKILL	MATH SKILL	READ SKILL	TUTOR
	68	7	7	7	2	7	7
	82	7	7	7	1	7	7
	86	7	7	7	3	7	5
	70	6	6	7	6	5	6
	99	7	7	7	5	7	5
	92	6	6	5	4	4	3
	99	7	7	7	6	7	7
	99	7	7	7	7	2	6
	72	7	6	6	1	7	4
	95	6	4	7	3	5	4
	72	7	7	7	5	7	7
	94	5	6	5	1	5	6
	97	7	5	7	7	5	5
	89	7	7	4	2	2	4
	92	7	5	7	3	7	7
	80	4	4	4	3	4	4
	80	6	7	5	2	2	4
	76	7	7	7	2	7	5

STUDENTS NEEDING ACADEMIC ASSISTANCE
With a Focus on Their Specific Needs

Explanation: Students are included on this list if their percentile scores on predicted academic difficulty (abbreviated ACAD DIFF) are 65 or higher. One form of supplementary information is given about students' receptivity to academic assistance (abbreviated REC ACADAS). In addition, information is given about specific needs in five academic areas (with low percentile scores indicating high need). The need scales include study habits (STUDY HABIT), intellectual interests (INTEL INTER), academic confidence (ACAD CONF), desire to finish college (DES FIN), and attitude toward educators (ATT EDUC). One approach would be to identify the students who are high on both ACAD DIFF and REC ACADAS. One could then identify the greatest needs of these students from their lowest scores on the remaining scales.

Name	ACAD DIFF	REC ACADAS	STUDY HABIT	INTEL. INTER	ACAD CONF	DES FIN	ATT EDUC
	78	52	31	73	71	16	45
	71	72	69	5	71	67	3
	89	52	11	17	11	6	32
	88	69	16	22	12	10	14
	71	52	47	44	46	31	35
	79	72	47	20	29	5	50
	78	75	59	37	18	12	19
	85	82	18	51	42	3	2
	65	27	41	62	26	4	22
	77	43	18	22	14	3	2
	73	96	62	48	37	13	35
	73	93	33	37	34	14	17
	84	52	25	37	32	20	14
	89	34	25	13	54	28	19
	70	61	20	37	23	18	38
	74	21	7	37	57	47	58
	95	95	27	37	3	16	4
	88	65	14	48	20	9	29
	89	79	29	17	9	79	62
	91	89	31	14	5	2	22
	91	75	31	9	29	5	50
	91	89	14	51	12	5	22
	92	61	25	67	9	16	32
	89	89	27	37	8	10	29
	77	79	66	10	26	31	58
	66	85	82	48	61	5	32
	72	82	66	48	32	25	29
	96	24	23	28	49	6	1
	95	82	18	40	5	10	2
	95	61	23	14	11	2	9
	70	56	31	14	29	5	17
	66	34	27	28	39	50	17
	66	89	66	73	64	22	54
	66	56	62	25	23	10	26
	99	99	27	25	6	5	22
	94	96	41	48	7	12	35
	77	65	64	44	29	22	19
	79	75	41	13	46	16	19
	98	79	12	32	3	28	9
	75	52	27	13	18	20	42
	93	75	13	17	23	6	17
	75	65	27	62	16	7	58
	66	95	72	65	14	31	35
	95	82	2	25	9	6	72

STUDENTS NEEDING ACADEMIC ASSISTANCE
With a Focus on Their Specific Needs

Name	ACAD DIFF	REC ACADAS	STUDY HABIT	INTEL INTER	ACAD CONF	DES FIN	ATT EDUC
	68	91	59	54	57	25	35
	82	89	10	1	14	86	85
	86	89	62	54	8	39	45
	70	89	56	37	64	22	67
	99	93	7	37	9	47	3
	92	61	11	65	14	4	2
	99	97	25	3	1	1	17
	99	89	4	14	5	5	2
	72	72	25	62	23	28	17
	95	65	36	37	5	12	14
	72	96	59	58	42	10	32
	94	61	2	3	14	1	3
	97	89	4	28	2	39	42
	89	52	2	37	57	43	1
	92	89	18	22	34	16	17
	80	39	33	44	29	5	4
	80	52	18	17	12	79	92
	76	85	38	17	57	47	17

STUDENTS WHO MIGHT BENEFIT FROM PERSONAL COUNSELING
With a Focus on Their Desire to Address Specific Areas

Explanation: Students are included on this list if their percentile scores on educational stress (abbreviated ED STRESS) are 65 or higher or if their percentile scores on dropout proneness (DROP PRONE) are 80 or higher. Supplementary information is given for indicators of desire for counseling on specific issues, including emotional tension (EMO), school (SCH), family (FAM), dating (DAT), roommate (ROOM), and unwanted habits (HAB). Desires are expressed on a scale of 1 (weakest) to 7 (strongest) One approach would be to select the students with high scores on either ED STRESS or DROP PRONE. From the remaining information, one could then identify the specific areas in which these students have the strongest desire for counseling.

Name	ED STRESS	DROP PRONE	EMO	SCH	FAM	DAT	ROOM	HAB
	88	42	2	4	3	2	1	6
	68	50	7	7	7	7	1	7
	75	59	4	3	2	2	3	7
	94	97	2	2	1	1	1	1
	98	99	7	1	6	7	2	4
	89	74	1	3	1	1	1	1
	87	84	4	3	3	4	4	1
	88	78	3	1	1	1	1	1
	84	82	4	4	5	3	1	5
	99	98	6	6	1	1	1	7
	83	24	3	4	1	1	1	1
	86	80	4	5	3	4	3	3
	70	48	2	3	5	1	5	5
	92	87	4	4	6	1	1	2
	94	78	1	2	1	1	1	1
	72	87	4	4	3	3	5	2
	89	99	1	4	1	1	4	4
	95	37	6	2	2	7	1	7
	87	71	3	3	2	2	3	7
	95	97	7	7	1	1	1	7
	93	94	4	3	5	4	7	7
	75	93	2	4	2	2	2	3
	87	36	5	2	4	5	5	5
	82	68	1	4	1	4	4	6
	82	62	1	3	1	1	4	1
	88	83	5	3	3	4	1	5
	14	87	1	2	2	1	1	1
	96	97	2	5	3	2	5	7
	97	97	6	6	2	4	7	3
	82	26	6	6	1	7	1	1
	78	31	2	5	1	3	5	7
	61	85	1	1	4	1	1	1
	88	96	2	3	1	1	1	1
	99	95	4	7	1	1	7	1
	22	90	4	1	1	4	7	1
	83	71	3	3	2	2	1	6
	72	63	4	7	1	5	3	7
	95	98	7	4	3	2	4	4
	89	88	7	2	6	6	1	6
	72	96	7	5	7	4	1	1
	97	36	5	1	1	1	1	1
	99	93	5	6	3	3	1	2
	72	72	5	5	1	5	7	1
	70	52	4	1	1	1	1	2
	91	70	5	3	1	1	1	2

STUDENTS WHO MIGHT BENEFIT FROM PERSONAL COUNSELING
With a Focus on Their Desire to Address Specific Areas

Name	FD STRESS	DROP PRONE	EMO	SCH	FAM	DAT	ROOM	HAB
	66	25	1	3	1	3	3	1
	76	63	3	3	3	4	2	3
	83	49	1	1	1	1	1	5
	95	89	3	3	3	2	2	4
	72	90	5	3	2	1	1	1
	94	99	6	7	3	6	3	6
	98	99	6	5	5	3	2	4
	96	91	3	5	5	4	4	6
	86	68	3	4	1	6	2	3
	61	81	3	4	4	2	4	3
	80	43	1	1	1	1	4	1
	90	85	2	3	3	6	7	3
	76	66	2	3	1	1	1	1
	55	85	1	1	1	5	5	7
	33	80	3	7	1	1	3	7
	87	54	2	1	1	1	1	1
	86	82	4	2	3	4	3	5
	83	57	1	4	1	1	4	1
	96	99	3	5	3	3	5	7
	96	92	4	6	6	4	4	3
	72	81	1	4	2	7	6	2
	70	87	1	2	2	2	5	7
	55	81	7	5	6	3	7	7
	76	25	2	1	1	1	1	2
	99	67	1	4	2	1	1	2
	75	89	6	1	4	7	3	5
	83	96	1	1	3	2	1	3
	84	91	3	5	4	1	1	6
	68	79	1	1	6	1	1	1
	88	40	2	7	1	1	4	1
	95	82	2	2	2	3	2	1
	88	99	2	2	1	1	2	4
	97	92	5	5	3	3	3	5
	88	85	5	7	4	4	6	7
	98	55	1	7	6	1	7	1
	82	10	1	3	1	1	1	1
	92	26	1	1	1	1	1	1
	99	97	3	7	1	1	1	7
	80	84	1	1	1	5	1	7
	84	86	3	3	3	3	1	1
	82	79	2	1	2	1	1	2
	84	99	3	7	3	1	1	5
	93	85	1	1	1	1	1	1
	99	96	2	3	1	4	4	1
	95	36	1	6	1	2	1	1
	97	61	6	4	4	6	2	6
	84	91	7	7	7	7	7	7
	99	99	4	1	1	1	1	3
	93	98	4	5	1	2	1	7
	72	46	2	2	4	1	3	5
	80	93	6	4	3	7	1	7
	97	95	5	5	1	2	2	2
	76	55	1	1	1	2	1	7
	84	89	5	7	7	7	7	5
	97	92	7	5	5	5	3	7

STUDENTS WHO MIGHT BENEFIT FROM PERSONAL COUNSELING
With a Focus on Their Desire to Address Specific Areas

Name	ED STRESS	DROP PRONE	EMO	SCH	FAM	DAT	ROOM	HAB
	99	99	6	7	5	6	1	6
	66	35	2	2	1	2	1	2
	93	97	1	1	1	3	1	1
	78	78	5	2	4	5	1	1
	30	86	1	4	1	1	1	2
	46	84	1	1	1	1	1	1
	68	41	1	1	1	6	1	1
	82	72	7	7	7	5	7	7
	70	71	2	2	2	1	1	1
	87	95	3	3	3	3	3	5
	93	96	4	4	3	4	4	4
	86	78	3	4	2	2	4	5
	99	98	7	4	4	4	2	1
	64	86	4	5	2	2	6	2
	82	73	3	2	2	2	1	5
	83	54	7	7	1	6	4	7

STUDENTS WHO MIGHT BENEFIT FROM PERSONAL COUNSELING
With a Focus on Their Specific Needs

Explanation: Students are included on this list if their percentile scores on educational stress (abbreviated ED STRESS) are 65 or higher or if their percentile scores on dropout proneness (DROP PRONE) are 80 or higher. Supplementary information is given about the students' receptivity to personal counseling (REC PERCOU). In addition, information is given on the students' specific needs in five areas related to counseling (with low percentile scores indicating high need). The need scales include academic confidence (ACAD CONF), attitude toward educators (ATT EDUC), self-reliance (SELF REL), ease of transition (EASE TRAN), and family emotional support (FAM EMOSUP). One approach would be to identify the students who are high on receptivity to personal counseling. One could then identify the greatest needs of these students from their lowest scores on the remaining scales.

Name	ED STRESS	DROP PRONE	REC PERCOU	ACAD CONF	ATT EDUC	SELF REL	EASE TRAN	FAM EMOSUP
	88	42	78	20	76	40	11	41
	68	50	99	29	99	21	35	74
	75	59	86	39	42	18	13	17
	94	97	25	11	32	3	18	16
	98	99	95	12	14	13	7	4
	89	74	25	46	35	18	11	16
	87	84	81	29	50	7	47	47
	88	78	25	37	17	64	38	11
	84	82	88	18	19	9	44	26
	99	98	88	42	2	3	10	24
	83	24	45	57	45	13	22	36
	86	80	88	37	42	10	22	30
	70	48	86	39	32	32	35	17
	92	87	78	16	29	5	31	13
	94	78	19	14	26	10	13	14
	72	87	86	26	22	44	41	13
	89	99	67	14	2	48	25	1
	95	37	92	20	29	13	51	36
	87	71	84	26	14	9	59	26
	95	97	91	37	35	13	55	4
	93	94	98	34	17	10	25	14
	75	93	67	32	14	44	25	6
	87	36	94	71	67	7	22	36
	82	68	84	74	19	48	16	82
	82	62	45	37	26	10	47	24
	88	83	86	23	38	21	15	24
	14	87	25	94	32	74	81	6
	96	97	91	3	4	5	9	8
	97	97	96	20	29	5	20	10
	82	26	88	37	97	9	85	85
	78	31	90	66	72	24	55	47
	61	85	32	9	62	78	10	4
	88	96	32	5	22	48	28	39
	99	95	86	29	50	5	28	22
	22	90	78	29	17	36	78	8
	83	71	75	46	62	13	31	24
	72	63	95	29	32	13	68	74
	95	98	91	12	22	9	11	22
	89	88	96	32	3	6	31	6
	72	96	92	9	32	44	20	6
	97	36	39	2	95	2	15	41
	99	93	84	8	29	3	22	24
	72	72	91	26	35	36	22	17

STUDENTS WHO MIGHT BENEFIT FROM PERSONAL COUNSELING
With a Focus on Their Specific Needs

Name	ED STRESS	DROP PRONE	REC PERCOU	ACAD CONF	ATT EDUC	SELF REL	EASE TRAN	FAM EMOSUP
	84	89	99	42	32	24	10	26
	97	92	99	46	35	5	28	8
	99	99	99	14	3	1	5	10
	66	35	39	77	5	36	44	39
	93	97	25	2	42	9	41	16
	78	78	78	49	11	48	6	3
	30	86	39	57	1	98	28	58
	46	84	8	74	2	93	8	30
	68	41	45	54	85	32	38	41
	82	72	99	14	79	48	68	26
	70	71	32	77	14	18	31	33
	87	95	84	34	17	9	18	16
	93	96	90	29	4	9	18	13
	86	78	84	42	14	15	16	6
	99	98	88	8	50	3	8	6
	64	86	86	57	17	40	59	11
	82	73	67	39	62	4	16	54
	83	54	99	11	35	5	85	54

STUDENTS WHO ARE HIGHLY RECEPTIVE TO INSTITUTIONAL HELP

Explanation: Students are included on this list if their percentile scores on general receptivity to institutional help (abbreviated REC HELP) is 65 or higher. Supplementary information is given for predicted academic difficulty (ACAD DIFF), receptivity to academic assistance (REC ACADAS), receptivity to personal counseling (REC PERCOU), social enhancement (REC SOCEN), and receptivity to career counseling (REC CARCOU). One approach would be to select students with high scores on ACAD DIFF. From the remaining information, one could then identify the area(s) in which these students have the strongest desire for help.

Name	REC HELP	ACAD DIFF	REC ACADAS	REC PERCOU	REC SOCEN	REC CARCOU
	66	33	65	51	58	71
	99	60	99	99	98	91
	86	26	52	86	82	87
	88	71	72	75	96	76
	78	88	69	95	29	50
	76	79	72	81	24	79
	79	78	75	88	64	45
	93	85	82	88	64	94
	75	33	30	90	64	76
	93	36	82	88	93	76
	73	19	48	86	76	55
	89	48	69	78	82	94
	95	39	85	92	76	87
	83	58	75	84	82	55
	96	73	96	91	70	79
	99	73	93	98	98	91
	76	26	79	62	58	71
	89	15	89	51	96	79
	78	70	61	86	43	76
	96	95	95	91	82	76
	91	88	65	96	82	67
	70	35	75	88	89	9
	94	17	72	90	93	87
	70	91	75	86	15	59
	92	32	89	51	98	87
	91	56	75	78	89	87
	82	64	91	95	36	28
	95	91	89	91	82	83
	93	56	56	96	82	87
	81	92	61	92	50	63
	94	89	89	84	86	87
	91	61	72	91	76	79
	71	33	43	86	58	67
	86	18	43	75	96	94
	93	66	85	57	93	98
	84	72	82	78	70	67
	90	15	69	81	98	76
	70	33	56	57	64	79
	96	95	82	99	82	71
	84	95	61	92	82	55
	78	70	56	95	36	59
	81	57	79	81	70	55
	71	58	39	84	50	79
	78	54	52	91	58	63
	93	53	89	78	64	98

STUDENTS WHO ARE HIGHLY RECEPTIVE TO INSTITUTIONAL HELP

Name	REC HELP	ACAD DIFF	REC ACADAS	REC PERCOU	REC SOCEN	REC CARCOU
	92	66	89	88	29	98
	87	19	69	78	64	98
	73	66	56	86	43	67
	97	99	99	94	98	50
	97	94	96	95	76	79
	83	77	65	88	50	79
	92	79	75	81	96	79
	99	61	96	99	98	94
	66	40	79	45	86	36
	83	47	82	72	86	59
	78	75	65	91	24	71
	99	66	95	99	93	98
	98	60	99	90	98	76
	93	20	69	94	86	83
	84	95	82	84	43	76
	88	68	91	86	89	40
	66	55	48	62	64	76
	81	82	89	72	9	98
	78	86	89	62	86	40
	66	36	48	39	76	83
	68	70	89	32	64	55
	93	99	93	84	76	76
	70	44	43	78	64	71
	90	59	79	51	98	91
	93	43	69	96	82	71
	99	58	82	99	86	98
	82	99	89	84	15	79
	99	53	99	99	98	76
	94	72	72	96	96	67
	70	45	93	67	20	55
	99	72	96	99	86	98
	89	57	69	99	86	32
	75	51	75	75	36	71
	87	94	61	99	15	87
	79	44	52	88	86	55
	70	18	61	78	70	50
	98	58	89	99	64	59
	83	92	89	84	64	50
	68	80	52	32	82	83
	81	38	79	84	64	55
	83	64	75	88	70	55
	94	76	85	86	76	98
	82	56	75	67	82	71
	93	44	65	99	70	67

STUDENTS WHO MIGHT BENEFIT FROM CAREER COUNSELING
With a Focus on Their Desire for Specific Counseling Services

Explanation: Students are included on this list if their percentile scores on career planning (abbreviated CAR PLAN) are 35 or less. Supplementary information is given for receptivity to career counseling (REC CARCOU). Additional information is also given regarding the strength of students' desires for counseling on specific career issues, including the job market for college graduates (JOB MAR), the qualifications for various jobs (JOB QUAL), vocational assessment (VOC ASSESS), a comparison of the advantages and disadvantages of various occupations (COMP ADV), and help in selecting an academic program (SEL PROG). Desires are expressed on a scale of 1 (weakest) to 7 (strongest). One approach would be to select the students with high receptivity to career counseling. From the remaining information, one could then identify the specific issues on which these students have the strongest desires for help.

Name	CAR PLAN	REC CARCOU	JOB MAR	JOB QUAL	VOC ASSESS	COMP ADV	SEL. PROG
	28	45	7	6	3	4	2
	11	13	1	6	4	1	1
	22	91	6	6	7	7	7
	17	71	5	7	5	6	5
	15	76	3	7	6	7	6
	8	16	1	1	5	2	5
	24	50	5	6	4	4	4
	20	40	1	3	5	5	7
	11	79	7	6	6	4	7
	8	45	5	5	3	4	5
	20	94	7	6	7	7	7
	12	94	6	7	7	7	7
	28	63	6	6	5	5	4
	26	55	6	5	3	5	5
	1	32	1	2	7	2	7
	20	45	7	2	3	4	6
	31	24	1	1	6	3	6
	26	76	6	6	6	5	6
	24	28	6	3	2	4	3
	31	59	5	4	5	6	5
	9	76	6	6	7	3	7
	20	67	7	3	5	5	7
	28	9	1	1	7	1	1
	20	59	1	3	7	7	7
	20	18	1	6	1	1	6
	11	83	7	6	7	4	7
	20	50	7	5	5	1	5
	24	87	7	6	7	5	7
	28	67	6	4	7	5	5
	31	67	6	4	5	5	7
	28	40	7	3	7	1	3
	6	55	5	6	5	4	4
	34	79	6	6	6	6	6
	11	71	6	7	5	5	5
	6	55	4	6	5	3	6
	9	59	5	5	5	5	5
	22	63	2	7	5	5	7
	24	59	4	6	4	5	6
	4	98	7	7	7	7	7
	34	50	5	7	5	3	3
	22	32	4	4	6	4	1
	13	98	7	7	7	7	7
	26	67	7	6	4	5	5

STUDENTS WHO MIGHT BENEFIT FROM CAREER COUNSELING
With a Focus on Their Desire for Specific Counseling Services

Name	CAR PLAN	REC CARCOU	JOB MAR	JOB QUAL	VOC ASSESS	COMP ADV	SEL PROG
	17	79	6	6	6	5	7
	12	50	5	3	5	3	7
	15	79	2	7	7	7	7
	28	79	6	6	6	6	6
	15	79	7	4	6	7	6
	13	94	7	7	7	7	6
	12	24	4	3	3	1	6
	5	67	6	6	6	4	5
	5	59	6	5	6	4	4
	12	71	6	5	6	5	6
	28	59	5	6	7	4	3
	12	79	6	6	6	6	6
	5	28	3	4	4	2	5
	24	71	5	7	5	5	6
	4	83	7	5	7	7	5
	26	76	5	7	3	7	7
	8	40	6	2	4	6	3
	22	76	6	7	4	6	6
	14	40	3	1	7	3	7
	34	55	7	5	2	3	7
	3	79	7	7	6	5	5
	34	45	6	6	2	5	3
	24	71	6	7	4	5	6
	26	63	4	5	6	5	6
	11	91	7	6	7	7	6
	22	71	6	6	5	6	5
	20	28	4	4	3	4	3
	20	98	7	7	7	7	7
	8	32	1	6	7	1	4
	24	79	6	7	7	5	5
	3	79	7	4	6	6	7
	26	36	5	5	1	7	2
	14	36	5	3	5	2	5
	9	67	5	4	6	6	6
	28	45	4	3	5	5	5
	4	76	7	7	7	7	1
	24	71	7	7	7	5	2
	7	87	7	6	7	6	6
	22	55	7	7	3	6	1
	4	50	5	5	5	3	5
	7	67	7	6	3	4	7
	1	98	7	7	7	7	7
	3	21	2	5	3	2	4
	5	67	5	1	7	7	7
	15	50	3	5	5	3	7
	17	45	4	6	4	4	4
	15	55	5	7	5	3	4
	8	55	7	5	5	4	3
	8	71	5	4	7	6	6
	34	24	1	1	7	1	7

STUDENTS WITH NEGATIVE INITIAL IMPRESSIONS OF INSTITUTION

Explanation: Students are included on this list if their percentile scores on initial impression (abbreviated INTMP) are 35 or less or if their transfer proneness scores (TRANS) are 65 or higher. Supplementary information is given about the students' strongest specific dissatisfactions (those with satisfaction ratings of 4 or less). For each student, the dissatisfactions are listed in the order of their intensity, with the most intense appearing farthest to the left. One approach would be to interview the least satisfied students regarding their most intense dissatisfactions. The aims of these interviews could be to (a) establish a positive personal relationship with the students and (b) attempt to resolve any practical problems that may be contributing to the students' general attitude.

Name	INTMP	TRANS	Major Dissatisfactions
	4	20	residence, financial aid, location, faculty
	17	45	location, entertainment, social life, costs
	10	20	shopping, location, financial aid, food
	3	20	financial aid, costs, residence, location, shoppi
	7	81	residence, athletics, food, faculty, financial ai
	15	20	shopping, location, costs, social life, food
	28	20	residence, shopping, entertainment, social life
	2	72	faculty, location, costs, shopping, entertainment
	49	72	entertainment
	13	81	social life, financial aid, costs, shopping, facu
	34	59	social life, costs, student body, athletics
	2	59	financial aid, shopping, entertainment, location
	19	59	costs, shopping, entertainment, financial aid
	4	92	social life, financial aid, acad. offerings
	10	90	social life, food, financial aid, faculty
	1	72	residence, social life, financial aid
	6	55	location, residence, shopping, social life, food
	2	90	residence, social life, financial aid, costs
	4	63	costs, shopping, entertainment, social life, food
	10	72	shopping, financial aid, costs, entertainment, fo
	3	20	residence, shopping, entertainment, location
	2	59	financial aid, costs, entertainment, social life
	9	84	athletics, shopping, entertainment, social life
	12	90	costs, location, food, campus appear., athletics
	2	55	residence, costs, location, shopping, entertainme
	17	55	faculty, residence, social life, financial aid
	23	72	financial aid, athletics, entertainment
	31	20	shopping, social life, financial aid, costs
	7	20	financial aid, acad. offerings, food, costs
	5	87	entertainment, financial aid, location, social li
	3	20	residence, shopping, entertainment, location, cos
	5	51	residence, financial aid, shopping, location
	10	20	entertainment, athletics, financial aid
	7	72	shopping, entertainment, location, social life
	25	20	social life, entertainment, location, financial a
	3	51	costs, shopping, entertainment, campus appear., f
	12	84	residence, financial aid, costs, shopping, facult
	8	20	entertainment, financial aid, costs, location
	58	90	
	58	81	residence, financial aid, costs, location
	3	20	costs, shopping, location, financial aid
	9	20	financial aid, costs, entertainment, location
	3	45	residence, costs, shopping, location, entertainme
	25	72	shopping, social life, financial aid, entertainme
	1	55	costs, residence, shopping, faculty, entertainmen
	5	72	shopping, entertainment, location, athletics

STUDENTS WITH NEGATIVE INITIAL IMPRESSIONS OF INSTITUTION

Name	INIMP	TRANS	Major Dissatisfactions
	15	20	financial aid, shopping, location, costs
	23	20	financial aid, costs, location, social life
	58	72	athletics, financial aid
	17	84	entertainment, social life, acad. offerings
	12	59	shopping, entertainment, social life, financial a
	28	20	student body, acad. offerings, campus appear.
	17	72	financial aid, faculty, entertainment, athletics
	9	20	social life, shopping, entertainment, location
	6	96	athletics, entertainment, social life, financial
	15	81	location, shopping, residence, food, social life
	4	20	residence, entertainment, location, social life
	10	59	residence, shopping, social life, financial aid
	17	59	residence, social life, entertainment, financial
	10	84	financial aid, costs, residence, acad. offerings
	3	59	residence, location, costs, entertainment, food
	9	51	financial aid, shopping, costs, location
	19	87	shopping, social life, financial aid, campus appe
	7	59	acad. offerings, entertainment, student body
	6	59	costs, shopping, entertainment, location, food
	5	20	costs, entertainment, shopping, location, resider
	28	87	shopping, food, social life, financial aid
	25	20	athletics, costs, location, financial aid, faculi
	55	72	entertainment, location
	8	72	entertainment, financial aid, acad. offerings, c
	5	84	financial aid, acad. offerings, shopping
	19	87	costs, residence, social life, financial aid
	15	72	shopping, social life, financial aid, campus appe
	25	59	financial aid, costs, student body, social life
	9	72	social life, entertainment, location, residence
	28	45	shopping, entertainment, location, financial aid
	3	87	shopping, social life, entertainment, location, f
	6	81	costs, entertainment, athletics, acad. offerings
	34	20	entertainment, shopping, costs, location
	28	45	financial aid, entertainment, location, athletics
	23	55	shopping, entertainment, location, athletics
	2	90	entertainment, costs, residence, social life
	25	20	residence, athletics, social life, financial aid
	4	84	location, entertainment, food, financial aid
	3	20	entertainment, athletics, food, shopping
	4	63	social life, financial aid, costs, shopping, faci
	2	51	residence, entertainment, location, social life
	15	45	shopping, financial aid, entertainment, social li
	43	72	location, social life, costs, shopping
	3	84	costs, location, food, shopping, entertainment
	5	90	residence, location, food, financial aid
	31	45	shopping, athletics, social life, costs, faculty
	28	92	financial aid, shopping, entertainment, athletics
	28	59	shopping, residence, financial aid, entertainment
	5	20	costs, location, campus appear., residence
	5	72	shopping, location, financial aid, entertainment
	34	20	entertainment, social life, athletics
	1	51	social life, costs, shopping, entertainment
	38	72	financial aid, entertainment, athletics
	4	51	social life, athletics, faculty, entertainment
	19	20	social life, faculty, entertainment, student body
	21	20	shopping, entertainment, financial aid, food
	1	59	financial aid, costs, shopping, entertainment

STUDENTS WITH NEGATIVE INITIAL IMPRESSIONS OF INSTITUTION

Name	INIMP	TRANS	Major Dissatisfactions
	8	84	location, residence, social life, financial aid
	8	84	costs, social life, acad. offerings, shopping
	21	63	costs, social life, financial aid, entertainment
	83	72	
	12	20	financial aid, costs, entertainment, student body
	25	20	social life, costs, shopping, faculty, athletics
	5	84	location, shopping, social life, entertainment
	3	96	residence, entertainment, location, social life
	13	81	financial aid, location, athletics, faculty
	23	59	costs, residence, acad. offerings, location, food
	9	20	costs, financial aid, food, residence, athletics
	13	51	social life, shopping, entertainment, residence
	10	20	shopping, entertainment, costs, location, athleti
	25	20	entertainment, shopping, food, financial aid, cos
	19	20	financial aid, residence, shopping, social life
	4	72	social life, financial aid, location
	9	20	costs, entertainment, location, food, campus appe
	17	20	costs, financial aid, food, campus appear.
	9	20	residence, financial aid, costs, entertainment
	1	87	costs, entertainment, student body, location, foo
	31	51	costs, shopping, location, athletics
	5	63	social life, costs, location, financial aid
	17	20	acad. offerings, shopping, entertainment, resider
	12	81	shopping, social life, financial aid. faculty
	34	59	athletics
	7	72	costs, residence, social life, financial aid
	1	81	social life, financial aid, residence, shopping
	8	20	financial aid, costs, shopping, entertainment
	10	20	social life, financial aid, costs, shopping
	5	84	residence, financial aid, food, shopping
	2	87	food, social life, costs, shopping, entertainment
	3	55	costs, food, campus appear., student body, locati

STUDENTS NEEDING SOCIAL ENHANCEMENT

Explanation: Students are included on this list if their percentile scores on ease of transition (abbreviated EASE TRAN) are 35 or less. Supplementary information is given for receptivity to social enhancement (REC SOCEN). Additional information is also given regarding the strength of students' desires to participate in specific social activities, including meeting new friends (NEW FRIEND), learning about student government (STU GOV), finding a mentor (FIND MENTOR), and learning about fraternities and sororities (FRAT/SORO). Desires are expressed on a scale of 1 (weakest) to 7 (strongest). One approach would be to select the students with high receptivity to social enhancement. From the remaining information, one could then identify the specific activities in which these students have the strongest interest.

Name	EASE TRAN	REC SOCEN	NEW FRIEND	STU GOV	FIND MENTOR	FRAT/ SORO
	11	43	3	7	3	4
	15	24	1	4	5	4
	35	98	7	7	7	7
	13	82	6	6	5	6
	13	29	7	3	1	4
	18	15	1	1	3	7
	7	29	4	3	4	4
	11	50	5	5	5	3
	10	64	6	2	7	5
	22	89	6	6	6	7
	22	93	7	6	7	6
	35	76	6	5	6	5
	31	82	4	5	7	7
	13	29	3	4	5	3
	25	29	7	1	4	3
	25	98	7	7	7	7
	25	50	5	5	5	3
	22	6	2	3	2	2
	22	96	7	7	7	6
	16	24	4	4	3	3
	28	86	5	7	5	7
	15	43	6	4	4	3
	20	64	6	3	5	6
	9	82	5	6	6	6
	20	82	7	5	5	6
	10	36	5	4	6	1
	28	36	3	3	3	7
	28	15	1	3	7	1
	31	50	3	6	4	5
	11	82	7	6	5	5
	31	82	6	7	6	4
	20	50	5	5	4	4
	15	15	3	5	1	3
	22	86	6	6	6	6
	22	76	7	5	6	4
	31	58	6	4	5	4
	28	43	4	4	2	7
	35	64	5	5	5	5
	15	70	7	5	5	4
	15	24	4	3	4	3
	20	64	6	6	2	6
	31	82	7	6	6	4
	7	82	4	7	6	6
	25	36	3	4	5	4
	15	70	4	7	5	5

STUDENTS NEEDING SOCIAL ENHANCEMENT

Name	FASE TRAN	REC SOCEN	NEW FRIEND	STU GOV	FIND MENTOR	FRAT/ SORO
	25	15	4	1	5	2
	18	58	6	5	5	3
	28	64	5	5	7	3
	15	43	3	3	6	5
	22	98	7	7	7	7
	11	76	6	5	6	5
	16	50	2	6	7	3
	9	96	6	7	7	7
	35	98	7	7	7	7
	28	6	2	3	2	2
	13	24	4	2	4	4
	15	43	6	2	4	5
	22	15	3	3	3	3
	18	86	7	6	6	5
	20	86	4	6	7	7
	11	9	3	3	2	2
	7	20	4	3	5	1
	20	24	3	3	5	3
	25	93	7	7	7	5
	22	86	5	7	5	7
	28	9	3	3	1	3
	18	43	3	5	2	7
	15	89	6	6	7	6
	15	1	1	1	1	1
	22	58	6	7	1	5
	5	29	5	2	6	2
	20	98	7	7	7	7
	3	82	6	7	5	5
	6	86	7	5	7	5
	4	9	1	1	5	3
	9	15	3	2	5	2
	35	98	7	7	7	7
	15	24	3	3	5	3
	9	96	7	7	6	7
	16	58	6	3	5	5
	22	58	4	7	1	7
	10	86	5	7	7	5
	28	86	3	7	7	7
	15	9	2	3	3	2
	16	36	5	4	2	5
	5	15	2	3	2	5
	6	70	5	6	5	5
	28	20	3	2	7	1
	8	50	7	1	4	6
	31	24	2	4	6	2
	18	64	5	5	5	5
	18	43	4	4	5	4
	31	82	6	7	5	5
	6	1	1	1	1	2
	16	64	5	4	7	4
	8	70	5	5	5	6
	16	82	7	6	5	5
	35	4	3	1	3	1

STUDENTS WITH HIGH SELF-REPORTED LEADERSHIP SKILL

Explanation: Students are included on this list if their percentile scores on leadership (abbreviated LEADER) are 65 or higher. Supplementary information is given for attitude toward educators (ATT EDUC), ease of transition (EASE TRAN), openness (OPEN) interest in student government (STU GOV), and formal high school leadership experienc (LEAD EXP). STU GOV is expressed on a scale of 1 (lowest) to 7 (highest), and LEADER EXP is indicated as yes or no. One approach would be to encourage students to seek participation in particular roles based on their general leadership and their strengt in the supplementary areas that relate most directly to those roles.

Name	LEADER	ATT EDUC	EASE TRAN	OPEN	STU GOV	LEADER EXP
	80	14	15	42	4	No
	65	50	87	8	5	No
	76	29	38	23	4	Yes
	87	6	22	97	7	No
	94	19	65	14	2	Yes
	92	32	81	26	7	No
	92	99	89	74	7	Yes
	87	45	89	97	7	No
	72	76	51	34	7	Yes
	99	42	87	98	7	Yes
	94	17	78	89	7	Yes
	68	62	68	14	6	No
	76	82	62	52	7	No
	65	88	51	20	4	No
	99	54	85	18	2	No
	87	50	75	98	4	No
	80	17	78	96	4	Yes
	68	32	55	12	4	Yes
	84	97	72	74	2	No
	84	11	62	94	3	No
	89	2	8	98	1	No
	80	92	31	89	7	Yes
	92	29	6	23	1	Yes
	72	62	16	23	6	No

STUDENTS WITH LOW SCORES ON INTERNAL VALIDITY

Explanation: This scale measures the student's carefulness in completing the inventor It is very useful in identifying students who might have responded randomly in order to finish quickly. Students are included on the list if their raw scores on internal validity (abbreviated INT VALID) are 8 or less out of a possible 10. Because the validating task is is extremely easy (requiring only that students give a set of standard responses to certain questions), this criterion places their CSI reports in the categories of either "questionable" or "unsatisfactory."

All unsatisfactory internal validity scores (6 or less) are starred. Such scores raise serious doubt about the validity of the students' CSI results. They also suggest the possibility, among other things, of either above-average dropout proneness as an underlying motivational tendency or the existence of severe language difficulty One approach is to explore these possibilities in interviews with the students listed To facilitate such interviews, the list provides supplementary information on dropout proneness (DROP PRONE), predicted academic difficulty (ACAD DIFF), study habits (STUD HABIT), desire to finish college (DES FIN), and native language. Whether or not one can accept these scores as valid will depend on the facts discovered in the interview

Name	INT VALID	DROP PRONE	ACAD DIFF	STUDY HABIT	DES FIN	Native Language
	8	87	48	38	16	English
	8	72	61	80	20	Other
	3*	99	99	7	47	English
	6*	72	58	64	39	Other
	8	43	60	89	31	Other

Plot Your Scores - *Student's Copy*

Name: PSY585B
Date:
I.D.# Class Summa
sample - 27 stude

The chart below is used to interpret the scores you calculated on page 2 of this booklet. Each column of the table below is labeled using the three-letter codes. Copy your scores from page 2 into the space provided for each scale. Find your score on the scale directly above each scale code and place an X over this number. Do this for each scale.

For example, if your ATT score was 29, find the number 29 on the set of numbers just above the ATT scale name and place an X over the 29, as shown in the example below.

40	31
35	30
30	~~29~~
25	--

If you cannot find your exact score, place an X over the next lowest number. When you have finished all 10 scale scores, connect the X's to see your learning and study strategies profile.

The columns on the far left and far right of the chart show percentiles. You can use these percentiles to look at your scores in relation to other college students answering the same items.

Each of the three-letter codes indicates a category of learning and study strategies or methods. The meanings of the codes are:

- **ATT** • attitude and interest - commitment
- **MOT** • motivation, diligence, self-discipline, and willingness to work hard
- **TMT** • use of time management principles for academic tasks
- **ANX** • anxiety and worry about school performance
- **CON** • concentration and attention to academic tasks
- **INP** • information processing, acquiring knowledge, and reasoning
- **SMI** • selecting main ideas and recognizing important information
- **STA** • use of support techniques and materials
- **SFT** • self testing, reviewing, and preparing for classes
- **TST** • test strategies and preparing for tests.

99	39	39	39	39	38	39	25	38	39	39	99
95	38	38	33	36	34	36	23	33	33	37	95
90	37	37	32	34	32	34	22	31	32	35	90
85	36	36	30	33	31	32	21	30	30	34	85
80	35	35	29	32	30	31	--	29	29	33	80
75	**--**	**--**	**28**	**31**	**29**	**30**	**20**	**28**	**--**	**--**	**75**
70	34	34	27	30	--	29	--	27	28	32	70
65	--	33	~~26~~	29	28	--	19	26	27	--	65
60	33	32	25	28	27	~~28~~	--	--	--	31	60
55	--	--	24	27	26	27	--	25	~~26~~	--	55
50	~~32~~	**31**	**23**	**26**	**25**	**--**	**18**	**--**	**25**	**30**	**50**
45	--	30	22	25	~~24~~	26	--	~~24~~	--	29	45
40	31	--	21	~~24~~	23	25	~~17~~	23	24	--	40
35	30	~~29~~	20	23	22	24	--	--	23	28	35
30	29	28	19	22	21	23	16	22	22	~~27~~	30
25	--	27	18	21	20	22	--	21	21	26	25
20	28	26	17	20	19	21	15	20	20	25	20
15	27	25	15	19	18	20	14	19	19	24	15
10	25	23	14	17	16	19	13	18	18	22	10
05	23	20	12	15	13	17	11	16	16	19	05
01	19	17	09	12	10	14	08	13	12	14	01
	32	29	26	24	24	28	17	24	26	27	
	ATT	MOT	TMT	ANX	CON	INP	SMI	STA	SFT	TST	

APPENDIX T

SENECA COLLEGE OF APPLIED ARTS & TECHNOLOGY
SCHOOL OF COMPUTER STUDIES

A STUDENT ALERT PROJECT (ASAP)

SCHEDULE OF STUDENT RESOURCES

Area of Recommendation	Department Contact	Location
Academic-Related Information and Advisement (eg. Academic Policy, subject-related matters)	Ron Tarr, 1st Year Coordinator Judith Limkilde, Chair	Room 144B Room 144M
Career Advisement and Planning	Ron Tarr, 1st Year Coordinator Judith Limkilde, Chair	Room 144B Room 144M
Career Counselling	Veronica Ho - Monday and Thursday Michael O'Driscoll - Tuesday Counselling and Special Needs*	 Room 144F
Financial Aid/Student Awards, Bursaries, Scholarships	Financial Aid Office Newnham Campus (next door to Registration)	Room 2310
Financial Concerns	Veronica Ho - Monday and Thursday Michael O'Driscoll - Tuesday Counselling and Special Needs*	 Room 144F
Language Skills (writing, reading comprehension, vocabulary, etc.)	Maria Palla - Mon. Periods 3 and 4 Wed. Periods 2,3, and 4 Kathleen Freeman - Mon. Period 5 Writing Centre	 Room 144H
Part-time Jobs Housing	Jeff Flack, President Computer Studies Student Council	 Room 133
Peer Tutoring (Computer Studies subjects, depending on availability of tutors)	Russell Pangborn 2nd Year Coordinator	Room 144C
Personal Counselling	Veronica Ho - Monday and Thursday Michael O'Driscoll - Tuesday Counselling and Special Needs*	 Room 144F
Social Activities, including clubs, athletics, pubs, etc.	Jeff Flack, President Computer Studies Student Council	 Room 133
Study Concerns, including time management, stress management, exam anxiety, etc.	Veronica Ho - Monday and Thursday Michael O'Driscoll - Tuesday Counselling and Special Needs*	 Room 144F
Study Habits, including time management, study skills, note-taking techniques, test/exam strategies, etc.	PSY 585 Professors	See Below

Note: *Appointments must be made in advance. *Appointments for Veronica Ho and Michael O'Driscoll may be made through Brenda Baker, Divisional Secretary.*

PSY 585 FACULTY

PSY 585E/585F/585G	Lynda Archer	Room 137
PSY 585A/585B/585C	Gerry Foley	Room 111
PSY 585D/585J/585N	John Legate	Room 140
PSY 585K/585O/585P	Janet Mawhinney	Room 138
PSY 585H/585I	Dennis O'Neill	Room 111

prepared by Vicki Milligan 10/91

APPENDIX U

LEARNING AND STUDY STRATEGIES INVENTORY (LASSI)

DESCRIPTION OF THE LASSI SCALES AND RECOMMENDATIONS FOR ACTION

ATTITUDE (ATT) Students' general attitudes toward school and their general motivation for succeeding in school have a great impact on their diligence in study, particularly in autonomous situations in which they must study on their own. If the relationships between school and their life goals and attitudes about themselves and the world are not clear, then it is difficult to maintain a mind-set that promotes good work habits, concentration, and attention to school and its related tasks.

Students' scores on this scale measure their general attitudes and motivation for succeeding in school and performing the tasks related to school success. Students who score low on this measure need to work on higher level goal setting and reassess how school fits into their future. If school is not seen as relevant to the student's life goals and attitudes, then it will be difficult, if not impossible, to generate the level of motivation needed to help take responsibility for one's own learning and for helping to manage one's own study activities.

Recommendations:

- consider *why* you are at college/*why* you chose this particular program; *how clear* are you about your program and career goals?
- research careers/jobs in this field
- get advice from first-year program coordinator regarding program expectations and careers in this field
- career counselling through the Counselling Centre

MOTIVATION (MOT) The Attitude Scale measures students' general attitudes toward school and their general motivation for succeeding in school. However, although general motivation level is important, so is a student's motivation to perform the specific tasks related to achievement. The degree to which students accept responsibility for studying and for their performance is reflected in the everyday behaviours they exhibit related to school and school tasks. These behaviours include reading the textbook, preparing for class, finishing assignments on time, and being diligent in studying even if the topic is not particularly interesting to them (or even trying to figure out ways to make it more interesting).

Students' scores on this scale measure the degree to which they accept responsibility for performing the specific tasks related to school success. Students who score low on this measure need to work on goal

setting, perhaps at the more global levels assessed on the Attitude Scale, but certainly at the more specific level of individual tasks and assignments. Accepting more responsibility for studying and achievement outcomes requires that students learn to attribute much of what happens to them in school to their own efforts rather than to outside forces such as luck or poor teachers, or to uncontrollable forces such as innate ability. Accepting more responsibility and attributing success to one's efforts results in more effective studying and school performance.

Recommendations:

- realistically consider your *priorities*; what is most important to you; what are *you* prepared to do to attain your goals?

- consider your level of *commitment* to your chosen college program; do you attend your classes regularly; do you participate in class discussions; do you complete homework assignments; do you adequately prepare for tests and exams?

- consider your time management, study, and test preparation strategies and techniques

TIME MANAGEMENT (TMT) Managing time effectively is an important support strategy for learning. Most students have various demands on their time and only by creating realistic schedules and sticking to them can they fit in everything. Creating and using schedules also encourages students to take more responsibility for their own behaviour. It also requires some knowledge about themselves as students and learners. What are their best and worst times of day? Which subjects are easier or harder for them? What are their preferences for learning methods? This type of knowledge and self awareness helps students to create workable schedules, and perhaps even more important, helps to create the motivation to use them.

Students' scores on this scale measure the degree to which they create and use schedules. Students who score low on this measure may need to learn about how to create a schedule and how to deal with distractions, competing goals, and procrastination. Accepting more responsibility for studying and achievement outcomes requires that students set realistic school goals and create plans that will facilitate goal achievement. These activities are enhanced by effective time management.

Recommendations:

- consider *how* you use your time; identify your time commitments; *plan* your time by preparing a schedule or a task list

- get help with time management techniques from the Counselling Centre (see Learning Skills Summary Sheets #1 and #7)

ANXIETY (ANX) Current conceptions of anxiety emphasize the effects of our own thought processes and how they affect school performance. Cognitive worry, a major component of anxiety, is manifested in negative self-referent statements. These negative thoughts about one's abilities, intelligence, future, interactions with others, or likelihood of success divert a student's attention away from the task at hand, such as studying or taking a test. If a student is worried that he will not have the time to finish a test, then he is just making matters worse by taking even more time away to worry about his performance. This type of self-defeating behaviour often sabotages a student's efforts. If students are tense, anxious, or fearful about studying or performing in academic situations, this will divert their attention away from the academic task and inward to self-criticism or irrational fears.

Students' scores on this scale measure how tense or anxious they are when approaching academic tasks. Students who score low on this measure (indicating high anxiety) need to learn techniques for coping with anxiety and reducing worry so that they can focus on the task and not on their anxiety. Many very capable students are often incapable of demonstrating their true level of knowledge and skill because they are paralysed or distracted by debilitating anxiety. In fact, helping some students learn how to reduce their anxiety is sufficient to help them improve their performance. Once these attentional blocks are removed, they do well.

Recommendations:

- consider the *cause* of the anxiety and what might be done to reduce it
- practise *positive* thinking
- get help with strategies for dealing with anxiety from the Counselling Centre (see Learning Skills Summary Sheet #8)

CONCENTRATION (CON) Concentration helps students to focus their attention on school-related activities, such as studying and listening in class, rather than on distracting thoughts, emotions, feelings, or situations. People have a limited capacity to process what is going on around them and in their own thoughts; if they are distracted, then there will be less capacity to focus on the task at hand. For students, this means that distractions, or anything else that interferes with concentration, will divert attention away from school-related tasks.

Students' scores on this scale measure their abilities to concentrate and direct their attention to school and school-related tasks, including study activities. Students who score high on this measure are effective at focusing their attention and maintaining a high level of concentration. Students who score low on this measure are less successful at focusing their attention on the task at hand by

eliminating interfering thoughts, emotions, feelings, and situations. They need to learn techniques to enhance concentration and to set priorities so that they can attend to school as well as their other responsibilities. Learning techniques for focusing attention and maintaining concentration helps students to implement effective learning strategies and can make learning and studying both more effective and more efficient.

Recommendations:

- create a study environment that is free of distractions and interruptions
- consciously try to focus your attention while studying
- review the techniques outlined in the Counselling Services Learning Skills Summary Sheet #6

INFORMATION PROCESSING (INP) Meaningful learning is enhanced by the use of elaboration and organization strategies. These strategies help to build bridges between what a student knows and what he or she is trying to learn and remember. Using what we already know, that is, our prior knowledge, experiences, attitudes, beliefs, and reasoning skills to help make meaning out of new information is critical to success in educational and training settings. The difference between an expert and a novice is not just the amount of knowledge they possess but also, and perhaps even more important, the way that knowledge is organized. It is the difference between storing one thousand folders by throwing them in the middle of a room versus storing them by some meaningful organization in filing cabinets.

Students' scores on this scale measure how well they can create imaginal and verbal elaborations and organizations to foster understanding and recall. Students who score low on this measure need to learn methods that they can use to help add meaning and organization to what they are trying to learn. These methods range from simple paraphrasing and summarizing to creating analogies, the use of application, creating organizational schemes and outlining, and the use of inferential, analytical, and synthetic reasoning skills. A student who does not have a repertoire of these strategies and skills will find it difficult to incorporate new knowledge and understanding in such a way that acquisition and recall will be effective, often despite the large amount of time spent studying. The effectiveness and efficiency of both autonomous and classroom learning are facilitated by the use of information processing strategies.

Recommendations:

- get help with information processing strategies from the Counselling Centre (see Learning Skills Summary Sheets #3 and #5)

SELECTING MAIN IDEAS (SMI) Effective and efficient studying requires that the student be able to select the important material for in-depth attention. Most lectures, discussions, and textbooks contain redundant material, extra examples, and many supporting details to help explain what is being taught or presented. A major school task involves separating out the important from the unimportant or simply didactic information that does not have to be remembered. If a student cannot select out the critical information, then the learning task becomes complicated by the huge amount of material the individual is trying to acquire. Lacking this skill also increases the likelihood that the student will not have enough time to study everything that must be covered.

Students' scores on this scale measure their skills at selecting important information to concentrate on for further study in either classroom lecture or autonomous learning situations. Students who score low on this measure need to learn more about how to identify important information so that they can focus their attention and information processing strategies on appropriate material.

Recommendations:

- get help with study skills from the Counselling Centre (see Learning Skills Summary Sheets #2, #3 and #5)

STUDY AIDS (STA) Students need to know how to use study aids created by others and how to create their own. Textbook authors or publishers will often use headings, special type, white space, special markings, summaries, and statements of objectives to help students learn from these materials. However, unless students know how to recognize and use these hints and aids they will not benefit from them. It is also important for students to know how to generate their own aids by methods such as the creation of diagrams, text marking, creating charts or summary sheets, and underlining. There are other supplementary activities that also support and enhance meaningful learning such as attending group review sessions or comparing notes with another student to either check accuracy or completeness.

Students' scores on this scale measure their ability to use or create study aids that support and increase meaningful learning and retention. Students who score low on this measure may need to learn more about the types of study aids provided in educational materials and classes and how they can create their own aids. Using and creating study aids improves both the effectiveness and the efficiency of learning, particularly in autonomous learning situations.

Recommendations:

- get help with the development and use of study aids from the Counselling Centre (see Learning Skills Summary Sheet #4)

SELF TESTING (SFT) Reviewing and testing one's level of understanding are important for knowledge acquisition and comprehension monitoring. These strategies both support and contribute to meaningful learning and effective performance. Without them learning could be incomplete or errors might persist undetected. Reviewing and self-testing also contribute to knowledge consolidation and integration across topics. Using mental reviews, going over class notes and the text, thinking up potential questions to guide reading or help prepare for an exam are all important methods for checking understanding, consolidating new knowledge, integrating related information (both from what is being learned and from what is already known), and identifying if additional studying must be done.

Students' scores on this scale measure their awareness of the importance of self testing and reviewing and the degree to which they use these methods. Students who score low on this measure need to learn more about the importance of self testing and need to learn specific methods to review school material and to monitor their comprehension. These methods include structured reviews of large amounts of material; mental reviews of individual study segments; asking questions before, during, and after reading or studying or going to class; trying to use new information in novel ways; trying to apply a principle or method; and using a systematic approach to study.

Recommendations:

- get help with self testing strategies from the Counselling Centre (see Learning Skills Summary Sheets #2 and #3)

TEST STRATEGIES (TST) Effective test performance depends on both preparation strategies and test-taking strategies. A student needs to know how to prepare for the type of performance that will be required and how to maximize that performance. Test preparation includes knowing about the type of test. For example, is it going to be a short-answer or a multiple-choice exam? Will performance require simple recall or will concepts, principles, and ideas need to be applied? Test preparation also includes knowing about methods for studying and learning the material in a way that will facilitate remembering and later use. Test-taking strategies include knowing about the characteristics of tests and test items, and how to create an effective test-taking plan.

Students' scores on this scale measure their use of test-taking and test preparation strategies. Students who score low on this measure may need to learn more about how to prepare for tests, how to create a plan of attack for taking a test, the characteristics of different types of tests and test items, and how to reason through to an answer. Often, students' performance on a test is not an accurate indicator of what they have learned. Knowing about test-taking and preparation strategies and how to use them helps students target their study activities, set up

study goals, implement an effective study plan, and demonstrate their knowledge and skill acquisition so it can be accurately evaluated.

Recommendations:

- get help with test-taking and test-preparation strategies from the Counselling Centre (see Learning Skills Summary Sheet #9)

APPENDIX V

PHASE 1: FACULTY AND STUDENT INTERVIEWS

Question 1: What percentage of students drop out of your program area before graduation in your estimation?

The range of faculty responses was 50 - 60%. The student responses ranged from 10% to 75%. Two faculty and two students had no opinion.

Question 2: What do you feel the five major causes of student attrition are in your program area? Please rank them in terms of significance.

The major causes of attrition as reported by faculty and students in terms of frequency and ranking were as follows:

Faculty Perceptions of Attrition Factors

Factor	Frequency	Rank (1-5)
Weak academic skills • lack of academic preparation • linked with attitudes and motivation • poor reading, writing skills • poor language skill • lack of critical thinking ability • ESL problems • no academic upgrading at college • as applications decrease, standards are lowered to meet enrollment targets • lack of early warning system	10	2.4
Lack of career/program focus • lack of goal commitment • wrong decision of program • poorly informed • expectations are out of sync • lack of commitment to college • lack of motivation and maturity • lack of aptitude for chosen program • wrong perceptions • lack of research for chosen program	10	2.1

Factor	Frequency	Rank (1-5)
Poor teacher/student interaction · needs of students not always met · focus on content instead of adjusting to meet needs of students · need for more teacher training · independent thinkers go to university; college students needs more guidance · lack of teachers as effective role models · teachers' lack of enthusiasm for subject · lack of faculty advisement or mentoring · best faculty should teach in 1st semester	6	2.5
Transition from high school · maturity level and work attitude · lack of motivation · size of Newnham Campus is a problem · lack of perceived relevance of courses	4	2.5
Part-time jobs · studying and working full-time · work takes priority · sometimes lifestyle need	3	4.7
Time management, study skills, organizational ability · overlaps with academic area · time management especially a problem for individualized courses	3	4
Personal problems · emotional, self-image · family and housing	3	3
Lack of self-confidence · low self-esteem · lack of sense of belonging · lack of maturity and motivation · lack of role model and support related to ethnicity	2	3.5
Financial	2	3.5
Lack of integration · lack of sense of belonging · no strategies to help students bond with smaller groups	1	3

Student Perceptions of Attrition Factors

Factor	Frequency	Rank (1-5)
Lack of career/program focus • lack of commitment to program/college • unclear expectations • college as stepping stone to university • course not meeting expectations • lack of motivation • lack of perceived relevance	6	2.8
Transition from high school • lack of maturity/motivation • peer pressure/distractions • small town to big city • difference in workload • more independence required • lack of commitment to college • high school more supportive • lack of integration	5	1.5
Time management, study skills, organizational ability • need to be more independent • difficulty managing multiple course assignments	4	4
Weak academic skills • lack of support for academic skills • reason is not always poor academic skills	4	3
Financial • family responsibilities • need to work as well as study	3	4.7
Poor teacher/student interaction • focus is on good students • concern for delivery of content rather than student understanding	3	3
Part-time jobs • hard to balance work and study	2	3
Lack of confidence • lack of self-esteem • addiction problems	2	2
Personal problems	1	5
Strike-related	1	1

Question 3: **At what point in the semester do you think faculty form perceptions as to which students will and will not be successful?**

Most faculty and students responded mid-semester. Only three faculty and two students believed that faculty formed perceptions within the first to third week of classes. Most faculty and students stated that faculty would need test results of students on which to base their perceptions.

Question 4: **In considering the five major causes of student attrition identified in #2 above, what are the corresponding intervention strategies that might effectively address each of these causes.**

The intervention strategies suggested by faculty and students were clustered under the headings used for reporting the major causes of attrition as follows:

Intervention Strategies Suggested by Faculty

Weak academic skills
- academic assessment and foundation studies
- early assessment - academic division should test students' abilities
- school/college articulation
- provide academic support
- provide tutorials
- provide streaming within program rather than front-loading
- provide more "help" centres - ESL, Math
- increase communication between high school teachers and college faculty

Lack of career/program focus
- orientation course
- interview students prior to enrollment
- use General Arts & Science courses to help students explore options
- upfront career counselling in high school
- meaningful college events to help students make the right choices
- school/college articulation
- student advisement program

Poor teacher/student interaction
- enhanced professional development for faculty
- essential part of evaluation
- greater awareness for faculty of student services
- rejuvenation sessions for faculty
- have faculty representation at registration to make contact with students
- more collaboration among teachers teaching the same course
- provide greater opportunities for student/teacher interaction outside the classroom
- change hiring practices to place more emphasis on teacher training

Transition from high school
- orientation course for all first semester students
- mentoring program
- faculty advisement program

Part-time jobs
- early counselling re possible effects of long part-time hours

Time management, study skills, organizational ability
- build into first semester orientation course
- should be integrated into core subjects
- train students to think

Personal problems
- increased access to counselling services
- increased visibility of counselling services

Financial
- allow students to take a partial load
- provide bursaries
- provide part-time work opportunities at college
- subsidized texts; provide loaners at beginning of semester
- improve access to financial aid

Lack of self-confidence
- build self-awareness component into first semester orientation course; work towards developing the right attitudes

Intervention Strategies Suggested by Students

Lack of career/program focus
- provide more career counselling
- explain choices
- provide faculty advisors
- articulation - start in high school by providing a course to research careers and college programs
- increase faculty/student contact
- provide co-op opportunities
- show relevance of course for students

Transition from high school
- provide tutorial hours - one-on-one with faculty
- faculty attitude is important in helping students make the transition
- provide a Psychology course in first semester (orientation course)
- use a diagnostic instrument to provide insight into areas of need
- don't force students; they often just need to mature; activities need to be subtle

Time management, study skills, organizational ability
- integrate techniques into core courses; students won't go to workshops run by Counselling
- build into timetable - first two to three weeks
- provide through orientation course to all first semester students

Weak academic skills
- provide developmental courses
- make developmental courses positive (e.g., EAC 150X is not)
- develop extra Math courses
- provide support for academic skills
- provide tutorial hours

Financial
- provide increased access to financial support
- provide scholarships that don't discriminate against foreign students
- provide on-campus work opportunities
- provide more scholarships and bursaries based on financial need

Poor teacher/student interaction
- improve faculty attitude towards students who need help
- develop faculty understanding of individual student learning styles and needs
- provide a student advisement program

Part-time jobs
- provide counselling to advise consequences of long hours of work
- provide time management training

Lack of confidence
- develop student confidence through Psychology course for first semester students (orientation course)
- provide insight for students of their own needs through first semester Psychology course (orientation course)

Lack of integration
- provide Psychology course for first semester students
- provide a student advisement program

personal problems
- increase self-awareness through Psychology course
- provide personal counselling

Question 5: **In your opinion, what is the likelihood of each of the strategies identified in #4 above being implemented at Seneca College?**

Question 6: **In your opinion, what is the likelihood of success for each of the strategies identified in #4 above?**

Generally, both faculty and students were positive about the likelihood of the strategies identified in question 4 being implemented and that they could be successful in reducing the attrition rate. Some concern was raised by faculty about the implementation of these measures being cost prohibitive.

Question 7: For the successful implementation of the strategies identified in #4 above, who should be involved and to what extent?

Faculty were identified most often by both the faculty and student groups as the most important people in terms of the implementation of the strategies identified in question 4. The faculty group identified the need for faculty and administrators to work more closely as a "team" in the implementation of strategies to reduce student attrition. The student group identified the importance of involving other students, through Student Life and the Student Council, through a mentoring program, and by having Seneca students interact with high school students.

Question 8: Do you believe students are able to self-identify areas of weakness prior to the start of college? (e.g., study skills, lack of career focus, etc.)

All students interviewed responded that students would not be able to self-identify areas of weakness prior to the start of college. They felt that students needed to experience the demands of college first in order to be able to identify their weaknesses. The majority of the faculty group felt that students could self-identify areas of weakness through appropriate diagnostic instruments which could make these determinations in a covert manner.

APPENDIX W

PHASE 1: FACULTY AND STUDENT QUESTIONNAIRES

Faculty Questionnaire

Question A: I believe that students drop out of college prior to graduation for the following reasons:

(SA) strongly agree (a) agree (NA) neither agree nor disagree (D) disagree (SD) strongly disagree

	Reason	SA	A	N/A	D	SD	No Resp
QA1	Weak Academic Skills	8	11	4	0	0	0
QA4	Weak Study Habits	9	12	1	1	0	0
QA2	Lack of Goal Commitment	6	13	3	1	0	0
QA9	Lack Academic Integr'n	7	11	3	1	0	1
QA13	Excessive pt Work Hrs	6	13	3	1	0	0
QA3	Shift in goal commitment	6	12	3	2	0	0
QA5	Personal Problems	3	10	9	1	0	0
QA16	Course/Prgm Irrelevance	3	9	7	3	1	0
QA11	Financial Reasons	2	9	9	2	1	0
QA12	Lack Self-confidence	2	10	9	2	0	0
QA14	Poor stud/tchr interact	4	3	12	4	0	0
QA8	Transportation/Commute	3	5	9	5	1	0
QA15	Course/Prgm Boring	3	3	12	3	2	0
QA6	Lack of Daycare	1	6	10	5	1	0
QA10	Lack Social Integr'n	1	5	9	5	2	1
QA7	Lack Affordable Housing	2	1	13	6	1	0
QA17	Poor Timetable	1	2	11	8	1	0

Question B: Considering the 17 items listed above and the college students you know, which three items do you think are the most significant reasons for students generally to drop out of college prior to graduation.

Reason	First	Second	Third	Total
QA1 Weak Academic Skills	14	1	1	16
QA4 Weak Study Habits	2	5	5	12
QA2 Lack of Goal Commitment	0	6	1	7
QA9 Lack Academic Integr'n	2	2	3	7
QA13 Excessive pt Work Hrs	1	2	2	5
QA3 Shift in goal commitment	1	1	2	4
QA5 Personal Problems	0	1	2	3
QA16 Course/Prgm Irrelevance	0	1	1	2
QA11 Financial Reasons	0	2	3	5
QA12 Lack Self-confidence	0	0	1	1
QA14 Poor stud/tchr interact	2	0	0	2
QA8 Transportation/Commute	0	0	0	0
QA15 Course/Prgm Boring	0	1	0	1
QA6 Lack of Daycare	0	0	0	0
QA10 Lack Social Integr'n	0	0	1	1
QA7 Lack Affordable Housing	0	0	0	0
QA17 Poor Timetable	0	0	0	0
No Response	1	1	1	3

Additional Comments:

Total Responses = 6/23 26.1%
Total Comments = 6

Response Cluster	Frequency	% of Total Comments
Teacher-Related	2	33.3
Lack of Focus/Motivation	1	16.7
Course-Related	1	16.7
Miscellaneous	2	33.3
Total	6	100.0

Sample Faculty Comments

Teacher-Related

2. Maybe there's nothing "wrong" with most students that a better marriage of WASP attitudes and their cultures would not alleviate.

16. What interests me in my research on the place of "caring" in the relations of teachers and students - uncaring teachers, uninspired, disinterested teachers, "dead" classrooms.

Lack of Focus/Motivation/Confidence

14. Many obstacles (eg. financial) students can overcome. Major reasons for dropping out are things students don't feel they can overcome.

Course-Related

23. What is missing is reference to proper evaluation of our courses in comparison to university requirement.

Miscellaneous

3. All 17 are reasons for dropping out so I would have to "strongly agree" with all of them. I think a more meaningful question would be to order the 17 from the most common to the least common reasons for dropping out.

11. Most are reasons I have heard for leaving but many of the 17 have a low number of incidence.

Question C: I believe that the following strategies would be effective in reducing student dropout:

(SA) strongly agree (a) agree (NA) neither agree nor disagree (D) disagree (SD) strongly disagree

Strategy	SA	A	N/A	D	SD	No Resp
QC 1 Provide Acad Skills Assmnt	10	10	2	1	0	0
QC 2 Provide Career Counsel	12	7	2	2	0	0
QC 8 Tutorials/Learn Centre	5	12	1	4	0	1
QC14 Improv Teacher Skills	5	12	5	0	1	0
QC 5 Mandatory Orientation	5	13	2	1	2	0
QC11 Personal Counselling Access	6	11	3	3	0	0
QC13 Course/Tchr Eval/Feedback	6	10	3	2	2	0
QC 3 Provide Advisement	5	11	4	2	1	0
QC 6 Integrated Tracking System	6	9	4	3	1	0
QC10 Financial Aid Access	4	8	8	3	0	0
QC15 Student-centred culture	4	7	9	1	2	0
QC 7 Incl Stdy Skills in Crses	4	6	6	4	2	1
QC 4 Imprv Stud/Tchr Inter'n	4	5	10	1	2	1
QC12 More Campus PT Work Access	0	9	10	2	2	0
QC 9 Social Activities Access	3	3	14	3	0	0

Question D: **Considering the 15 items listed above, please indicate which you believe to be the three most important to help students generally to successfully complete college.**

Strategy	First	Second	Third	Total
QC 1 Provide Acad Skills Assmnt	8	4	3	15
QC 2 Provide Career Counsel	4	5	1	10
QC 8 Tutorials/Learn Centre	4	1	2	7
QC14 Improv Teacher Skills	1	1	2	4
QC 5 Mandatory Orientation	0	0	1	1
QC11 Personal Counselling Access	0	0	2	2
QC13 Course/Tchr Eval/Feedback	0	3	0	3
QC 3 Provide Advisement	0	1	3	4
QC 6 Integrated Tracking System	1	0	3	4
QC10 Financial Aid Access	1	2	1	4
QC15 Student-centred culture	2	1	1	4
QC 7 Incl Stdy Skills in Crses	1	2	1	4
QC 4 Imprv Stud/Tchr Inter'n	0	0	1	1
QC12 More Campus PT Work Access	0	1	1	2
QC 9 Social Activities Access	0	1	0	1
No Response	1	1	1	1

Additional Comments: Total Responses = 7/23 30.5%
Total Comments = 7

Response Cluster	Frequency	% of Total Comments
Teacher/Staff-Related	3	42.8
Academic Assessment	2	28.6
Course-Related	1	14.3
Miscellaneous	1	14.3
Total	7	100.0

Sample Faculty Responses

Teacher/Staff-Related

4. I'm not sure "student-centred" is the way to go when the workplace (including Seneca) is not "worker-centred". I wish it were! This gives students th wrong message ("me"-oriented) about the workplace. There also seems to be a hidden agenda here tht implies professors aren't doing their jobs and therefore student feedback is needed. Most good techers provide oppotunities daily, weekly for feedback. We don't need you to do it for us, or for them. Please give us counselling and screening support for our students.

16. #14 (enhance faculty teaching skills and techniques) - ability to respond more sensitively to students.

22. #3 (provide an advisement program whereby each student has a faculty advisor) and #6 (develop and maintain a comprehensive and integrated tracking system to monitor student progress and achievement and provide appropriate feedback) look at the variations in commitment level from present co-ordinator structure. An integrated policy might work better than more paperwork. #15 - student centred? Is it even staff/faculty centered? #4 (improve the quality of teacher/student interaction in the classroom) - sounds good but how would be achieved when faculty have little knowledge of or exposure to current teaching methodology.

Academic Assessment

6. Enforce strict standards for Math and English in the secondary schools. ESL students must be fluent in English before attempting other academic programs.

13. If we could screen students coming in, all our problems would disappear.

Course-Related

23. Students must be exposed to external industry and standards personally (other than Coop) i.e., guest speakers, tours, orientation.

Miscellaneous

11. I guess most of these strategies will help students. The problem as I see it is that it already exists in one form or another. ie., feedback, orientation, counselling.

Question E: I believe that faculty are able to predict which students will or will not be successful:

	Frequency	% of Total Sample
No response	1	4.3
Within first 10 days of classes	4	17.4
After the first month of classes	6	26.1
By mid-semester	8	34.8
During 2nd half of semester	1	4.3
At end of semester	3	13.1
Total	23	100

Question F: **If you could make two important changes to improve student success at Seneca College, what would they be?**

Total Responses = 18/23 78.3%
Total Comments = 32

Response Cluster	Frequency	% of Total Comments
Academic Assessment and Foundation Studies	9	28.1
Pre-College Counselling	4	12.5
Smaller Classes	4	12.5
Teacher/Staff Related	3	9.4
Learning Centres, Tutorials, Advisors	3	9.4
Course-Related	3	9.4
Improve Physical Resources	2	6.3
Make Students Accountable	2	6.3
More Flexible Timetables	1	3.1
Academic Monitoring	1	3.1
Total	32	100.0

Sample Faculty Comments

Academic Assessment and Foundation Studies

2. On the assumption that we want the students to meet college-established levels for all courses, I think the best thing we could do for them is to offer a one-year college prep program (non-divisional oriented) on the assumption that if they can meet those standards then they should be able to cope with divisional standards.

3. Streaming of 1st semester students in foundation courses.

11. Pre-test to determine possibility of success. However, still don't screen. If you don't have language or math skills go get them then come back. (could get them at Seneca)

13. Screen them. Screen them.

21. More accurate assessment of basic skills prior to entry.

22. Better placement of incoming students - Their skills need to be at a certain common level, a minimum so that they have a chance at being successful and we don't lower our standards to accommodate students.

Pre-College Counselling

4. Better screening (academic and other) and counselling before registration.

5. Proper counselling pre college.

11. Talk to the students well before starting.

22. Better counselling before they arrive/register for a program.

Smaller Classes

3. Smaller classes.

8. Smaller first semester classes.

15. More ESL classes in small ration of teacher-students.

20. Reduce class sizes in labs (hands-on).

Teacher/Staff-Related

7. Hire Seneca Staff who are truly interested and dedicated to the job and the students.

12. Faculty evaluation on an ongoing basis.

16. Address in the most subtle, kind, and deliberate ways - the making of a much more thoughtful, sensitive, critical, responsive faculty - and make all administrators teach and be addressed in the same way.

Learning Centres, Tutorials, Advisors

9. Provide extra assistance for students if needed.

10. Faculty advisors.

21. Easier access to additional help outside class.

Course-Related

12. Course evaluation on ongoing basis.

23. Improve grounding of concepts in first level courses. Provide a longer grace period to "test drive" courses.

Improve Physical Resources

10. In Computer Studies area more computer terminals.

15. More private office space for faculty-student advisement and academic tutoring.

Make Students Accountable

5. Make students more responsble for their success or failure - provided support services exist.

8. Personal counselling to make the students responsible for their own actions - more tutors and financial aid is not the answer.

More Flexible Timetables

2. Maybe students should be allowed to prepare their own timetables based on a booklet prepared in advance. (Faculty names need not be given).

Academic Monitoring

21. Closer monitoring of underprepared students and consultation with them on a regular basis.

Student Questionnaire

Question A: I believe that students drop out of college prior to graduation for the following reasons:

(SA) strongly agree (a) agree (NA) neither agree nor disagree (D) disagree (SD) strongly disagree

Reason	SA	A	N/A	D	SD	No Resp
QA14 Poor stud/tchr interact	43	59	17	11	1	0
QA3 Shift in goal commitment	29	76	16	9	0	1
QA9 Lack Academic Integr'n	31	70	15	11	1	3
QA11 Financial Reasons	35	54	27	11	4	0
QA2 Lack of Goal Commitment	30	64	21	18	3	1
QA1 Weak Academic Skills	24	64	21	18	3	1
QA4 Weak Study Habits	36	54	22	15	2	2
QA13 Excessive pt Work Hrs	28	52	30	17	2	2
QA5 Personal Problems	17	59	42	10	3	0
QA12 Lack Self-confidence	15	63	35	17	1	0
QA16 Course/Prgm Irrelevance	14	46	40	22	7	2
QA17 Poor Timetable	16	37	37	34	7	0
QA10 Lack Social Integr'n	13	33	33	42	8	2
QA15 Course/Prgm Boring	11	33	36	41	8	2
QA7 Lack Affordable Housing	9	28	50	37	4	3
QA8 Transportation/Commute	10	30	27	51	11	2
QA6 Lack of Daycare	8	18	68	26	9	2

Question B: Considering the 17 items listed above and the college students you know, which three items do you think are the most significant reasons for students generally to drop out of college prior to graduation.

Reason	First	Second	Third	Total
QA11 Financial Reasons	23	9	15	47
QA14 Poor stud/tchr interact	15	20	11	46
QA1 Weak Academic Skills	21	16	6	43
QA2 Lack of Goal Commitment	21	13	6	40
QA4 Weak Study Habits	12	13	15	40
QA3 Shift in goal commitment	11	15	7	33
QA9 Lack Academic Integr'n	9	11	16	36
QA13 Excessive pt Work Hrs	4	11	6	21
QA5 Personal Problems	3	5	13	21
QA12 Lack Self-confidence	3	6	8	17
QA16 Course/Prgm Irrelevance	4	2	8	14
QA17 Poor Timetable	3	3	4	10
QA10 Lack Social Integr'n	1	3	6	10
QA15 Course/Prgm Boring	1	3	4	8
QA8 Transportation/Commute	0	1	2	3
QA7 Lack Affordable Housing	0	0	1	1
QA6 Lack of Daycare	0	0	1	1
No Response	0	0	2	2

Additional Comments: Total Responses = 43/131 32.8%
Total Comments = 50

Response Cluster	Frequency	% of Total Comments
Teacher-Related	15	30
Lack of Focus/commitment/ motivation	9	18
Improve College Resources	6	12
Need for Learning Centres/Tutorials	4	8
Poor Study Habits	4	8
Too Academically Demanding	4	8
Financial Problems	3	6
Lack of Confidence	2	4
Lack of Social Integration	2	4
Lack of Perceived Relevance	1	2
Total	50	100

Sample Student Comments

Teacher-Related

32. Please send all faculty-teachers to teacher training college before they teach here. Very very few of them know how to teach.

45. Teachers should be more understanding.

57. Hire experienced teachers.

96. Teachers should be evaluated by the students-we know how good they are!!

Lack of Focus/Commitment/Motivation

17. Not all students take the courses seriously because they have other options open to them. If they do not succeed here at Seneca. (sic)

34. First, weed out people who are not interested. Make sure the student that do want college want to stay in the classroom and help at students with some study skills. (sic)

46. There should be several courses dedicated strictly to identifying "individual" career/life goals. Without direction an education doesn't necessarily mean a whole lot.

64. Many students that drop out are just too lazy to do the required work. (sic)

Improve College Resources

74. Improve college facilities, there is not enough computers at the moment. We have to line up for computers and we can hardly log on from home because of the lack of phone line access to the college computer center. (sic)

76. Improve environment on campus e.g. more lounges, etc. Improve facilities e.g. library & computer terminals.

88. Improve resources & facilities. If there is not enough of these, students will become frsutrated and use this as an excuse of not being able to finish their work, which results in poor grades and finally dropping out.

Need for Learning Centres/Tutorials

95. Provide for smaller tutorial groups perhaps after lectures.

103. Aid centres for troublesome courses manned by senior and capable students.

Poor Study Habits

45. There should be resources (learning techniques) for the students.

92. Too many assignments to be done at one time towards the end of the semester.

Too Academically Demanding

33. Give the students basic computer operation training before teaching them computer languages.

102. For immigrants, lack of communication skills is, I believe a reason for unsuccessful college studies.

Financial Problems

75. Tuition fees and book costs are considerably raised each year with middle-lower class students finding it hard to stay in school even if they have better than average marks, yet unable to win a bursary or scholarship.

Lack of Confidence

22. Students drop out of school for several reasons but mostly they drop out because they feel that they can't make it (lack of confidence).

Lack of Social Integration

23. Many of the campuses are isolated from one another - therefore lack of school spirit.

Lack of Perceived Relevance

61. I would like to cut out some courses that is not relative with the computer course. (sic)

Question C: **Did you ever consider dropping out of College yourself?**

yes 54 (41%) **no** 77 (59%)

Question D: **If yes, which of the 17 items listed above might have led you to drop out?**

Reason	First	Second	Third	Total
QA11 Financial Reasons	14	6	5	25
QA14 Poor stud/tchr interact	14	7	3	24
QA3 Shift in goal commitment	6	2	4	12
QA5 Personal Problems	4	5	4	13
QA9 Lack Academic Integr'n	1	3	3	10
QA12 Lack Self-confidence	3	5	2	10
QA16 Course/Prgm Irrelevance	3	4	3	10
QA15 Course/Prgm Boring	1	4	5	10
QA13 Excessive pt Work Hrs	1	6	2	9
QA1 Weak Academic Skills	4	1	2	7
QA4 Weak Study Habits	3	2	1	6
QA2 Lack of Goal Commitment	1	4	2	7
QA17 Poor Timetable	1	1	5	7
QA10 Lack Social Integr'n	0	2	1	3
QA7 Lack Affordable Housing	0	1	1	2
QA8 Transportation/Commute	0	0	1	1
QA6 Lack of Daycare	0	0	0	0
No Response	75	78	82	235

Additional Comments: Total Responses = 23/54 42.6%
Total Comments = 27

Response Cluster	Frequency	% of Total Comments
Teacher-Related	10	37.0
Lack of Focus/commitment/ motivation	4	14.8
Financial Problems	4	14.8
Poor Study Habits	2	7.4
Too Academically Demanding	2	7.4
Lack of Perceived Relevance	2	7.4
Need for Learning Centres/Tutorials	1	3.7
Lack of Social Integration	1	3.7
Improve College Resources	1	3.7
Total	27	100

Sample Student Comments

Teacher-Related

30. I have this semester however considered dropping two subjects due to poor teaching (two courses).

43. Listen to the students what's wrong in their relationships with the teachers.

53. Although I understand instructors must have practical knowledge of what they teach - so many seem to have weak TEACHING skills. Can we ensure that there is some consistency between two classes with different instructors but the same course? Very annoying at exam time!

62. Enhance faculty teaching skills and techniques.

90. I think that our college has good teachers, but there are some who need to change careers. Lack of consideration for students.

Lack of Focus/Commitment/Motivation

21. I did drop out of university because it was to hard and it was not what I wanted. (sic)

82. I believe that if you already know what your goals are, it won't matter what problems or situations you will have to encounter because you are destined to finish what you started.

95. The course and teachers could be the best available, however, the student must WANT to succeed.

Financial Problems

17. I cannot because I am a visa student here and my tuition fee makes it hard to think about it.

61. Improve access to financial aid and increase on campus job opportunities.

Poor Study Habits

96. Teach students how to learn (note-taking, research).

Too Academically Demanding

9. I never thought to drop the school but I always wants to drope some courses and take them next semester because I

think I don't understand the materials. (neither from book.) (sic)

92. Too much pressure.

Lack of Perceived Relevance

77. The first year courses are irrelevant or not appropriate for this kind of study such as the first year math course.

96. Reduce the course load by removing redundant courses.

Need for Learning Centres/Tutorials

108. Provide tutorials and learning centres for students.

Lack of Social Integration

76. All of these relate to students who come to the college from outside the Toronto area.

Improve College Resources

94. Increase job placement counselling.

Question E: I believe that the following strategies would be effective in reducing student dropout:

(SA) strongly agree (a) agree (NA) neither agree nor disagree (D) disagree (SD) strongly disagree

Strategy	SA	A	N/A	D	SD	No Resp
QE14 Improv Teacher Skills	81	39	10	1	0	0
QE 4 Imprv Stud/Tchr Inter'n	73	37	20	0	0	1
QE 8 Tutorials/Learn Centre	62	59	9	1	0	0
QE 2 Provide Career Counsel	44	66	16	2	2	1
QE10 Financial Aid Access	54	43	28	4	2	0
QE 1 Prov Acad Skills Assmnt	39	69	17	5	1	0
QE13 Crse/Tchr Eval/Feedback	38	64	22	3	0	4
QE12 Campus PT Work Access	45	48	33	5	0	0
QE 7 Stdy Skills in Crses	34	52	32	9	3	0
QE 3 Provide Advisement	25	67	32	5	1	1
QE 5 Mandatory Orientation	18	54	39	17	0	3
QE 6 Integr'd Tracking System	23	63	31	10	1	3
QE11 Personal Cns'ling Access	16	71	41	1	0	2
QE 9 Social Activities Access	21	47	54	6	2	1
QE15 Student-centred culture	12	50	54	7	0	8

Question F: **Considering the 15 items listed above, please indicate which you believe to be the three most important to help students generally to successfully complete college.**

Strategy	First	Second	Third	Total
QE14 Improv Teacher Skills	30	18	20	68
QE 4 Imprv Stud/Tchr Inter'n	34	10	13	57
QE 8 Tutorials/Learn Centre	23	22	19	64
QE10 Financial Aid Access	11	14	17	42
QE 7 Incl Stdy Skills in Crses	5	16	9	30
QE 2 Provide Career Counsel	8	11	8	27
QE 1 Provide Acad Skills Assmnt	11	6	6	23
QE13 Course/Tchr Eval/Feedback	1	9	11	21
QE12 More Campus PT Work Access	1	7	10	18
QE 3 Provide Advisement	2	6	4	12
QE 6 Integrated Tracking System	2	4	3	9
QE 9 Social Activities Access	0	4	4	8
QE15 Student-centred culture	0	3	3	6
QE 5 Mandatory Orientation	3	1	0	4
QE11 Personal Counselling Access	0	0	3	3

Additional Comments: Total Responses = 35/131 26.7%
Total Comments = 44

Response Cluster	Frequency	% of Total Comments
Improve Teach Skills and Stud/Tchr Relations	16	36.4
Provide Career Counselling	7	15.9
Improve Social Interaction	4	9.1
Provide Learn Ctr/Tutorials	3	6.8
Provide Acad Assess/Dev Crs	3	6.8
Improve College Physical Resources	3	6.8
Impove Financial Aid	3	6.8
Assist with Transition	3	6.8
Teach Study Skills	2	4.5
Total	44	100

Sample Student Responses

Improve Teaching Skills and Student/Teacher Relations

17. Improve the standards of the faculty (some teachers have an attitude problem while others just don't know how to teach).

37. Improve the teachers way of teaching. Teacher should be more approachable to student. (sic)

40. Have teachers have an organized plan of the semester. Have them evaluated periodically.

60. Improve the teaching techniques.

73. Improve the quality of teachers in teaching skills and techniques. Improve course curriculum.

95. Enhance teachers' recognition of those students that seem to need help.

Provide Career Counselling

34. Inform people before they register.

46. Counselling is a good idea, however for those that are "shy" getting motivated to take this step is dampened by being intimidated. (sic)

95. Help students to identify if they are enrolled in the correct major. Meaning, a student might be enrolled in computer studies, but isn't sure about his/her career goal.

Improve Social Interaction

16. Those students who may be successful in terms of marks but who can't interact socially in any way should not be steamrolled through the courses just because of the grades!

74. Have more social events happening at the college for all students, not just one particular group of students.

76. Make social activities vary more to be more appealing to everyone - do not cater to one particular group.

Provide Learning Centres/Tutorials

11. I strongly agree on providing learning centers to get extra helps outside the class. (sic)

74. Provide learning centres for course-related material.

Provide Academic Skills Assessment/Developmental Courses

16. Too many graduates can't even read or write properly.

40. Have more strict admission policy. I don't mean not accept students out-right. But enroll them in a pre-college program. (Prep. school).

Improve College Physical Resources

90. We don't have enough microcomputers for the students.

Improve Financial Aid

88. I think financial problems can certainly be a cause for dropping out of school because it worries you every day.

97. Improve access to financial aid.

Assist with Transition/Orientation

7. An orientation of the college/campus would help especially those not entering from high school - therefore did not have a tour via their school.

103. Many students need some kind of support in order to complete their program which does not necessarily come from their close environment, parents, friends etc.

Teach Study Skills

7. Done to some extent in PSY but not enough.

116. Better time management, note taking and study skills.

Question G: I believe that faculty are able to predict which students will or will not be successful:

	Frequency	% of Total Sample
No response	5	4
Within first 10 days of classes	1	1
After the first month of classes	26	20
By mid-semester	51	39
During 2nd half of semester	28	21
At end of semester	20	15
Total	131	100

Question H: If you could make two important changes to improve student success at Seneca College, what would they be?

Total Responses = 94/131 71.7%
Total Comments = 123

Response Cluster	Frequency	% of Total Comments
Enhance Teaching Techniques and Teacher Attitudes	55	44.7
Improve College Resources	13	10.6
Academic Assessment and Foundation Studies	8	6.5
Learning Centres, Tutorials, Advisors	7	5.7
Improve Financial Aid	5	4.1
Provide Orientation for New Students	5	4.1
Improve Counselling Access	5	4.1
Improve Curriculum Relevancy	4	3.3
Improve Administration	4	3.3
Allow for Increased Student Input	3	2.4
Increase Social Interaction	3	2.4
Improve Student Motivation/ Commitment	3	2.4
Academic Monitoring	3	2.4
Improve Study Habits	2	1.6
Assist with Housing	1	.8
Miscellaneous	2	1.6
Total	123	100

Sample Student Responses

Enhance Teaching Techniques and Teacher Attitudes

7. Improve faculty teaching skills and techniques.

12. Improve interaction between student and teacher.

16. Improve the quality of teachers & their methods.

17. Properly screen both teachers & students who are entering the college.

25. Better teachers - teachers that teach not just talk!

39. I think most important that students should be treated like adults and not like high (school) students anymore. (sic)

43. When teachers schedule tests they don't take into consideration that the student may have two or more tests that day.

44. Teachers must be able to communicate with students properly and not be sarcastic when students ask questions.

50. The college needs to hire additional teachers who are well trained. Also should understand their subject as a teacher. Someone you can ask whenever you have a question. (sic)

52. I expect Seneca College to give some more importance to students needs and complaints, especially the ones regarding NOT HAVING GOOD INSTRUCTORS. (sic)

61. The most important factor that I feel is the lack of experienced teachers (specially in the areas of making the course or chapters clear to students) and also the textbooks that are offered are very expensive and also some teachers never teach them or use them. (sic)

79. Teachers should go to the work force after 5 years serving as teacher (teacher-work program) so they can update their skills & know what will students will be needing in the work-force. (sic)

88. I believe that some teachers in Seneca are not making any commitment towards their students. Some don't teach well. Some don't care. Some don't know the subject!!!

115. Better teaching skill.

Improve College Resources

3. Provide more terminals and/or dial up lines, allowing more students to use the system. Currently, there are FAR to few available. This has been a really big problem. (sic)

5. I would have the cafeteria stay open later to provide better service to students who find it hard to get to during its' current hours!!! (sic)

7. Get more terminals!!

11. VAX terminals are not enough in the new campus. Additional terminals are required.

16. Provide facilities equal to the reputation of the school.

55. Improve library facilities.

63. Open the computer lab on Sundays.

103. Provide more access to facilities such as the computer labs which are not as efficient.

Academic Assessment and Foundation Studies

28. Provide varies levels of assistance for those students under college level or ? (sic)

32. Have entry aptitude test for student prior to acceptance. (sic)

37. I don't think students are prepared well enough out of high school to enter college environment.

41. Raise academic acceptance levels. Provide extended programs who didn't meet the high standard so that they can gradually bring themselves up to the academic level they'll need to succeed. (sic)

75. Improved screening of potential students with less importance placed on marks and more emphasis placed on attitude and commitment.

116. Dissilusionment with the college and the program. Academic standards, testing are completely absent. Quality of education is a low priority for the college. (sic)

Learning Centres/Tutorials/Advisors

14. I would increase the learning centres and resources for students to get enough help.

20. Give students the chance to act as assistant tutors.

51. Provide tutorials and learning centre for students to get extra help outside of class.

102. Student advisors or tutors should be made available if high demand warrants it. These advisors/tutors could be at a specified location for a specified amount of time regularly every week.

Improve Financial Aid

6. Improving access to financial aid, scholarships. Increasing on campus part-time job opportunities.

82. I have to work everyday in order to come to college, also my parents are unemployed therefore you feel that is too much to keep going. However, the belief of having a career makes you keep going. (sic)

107. Help student solve financial problems.

Provide Orientation for New Students

12. Mandatory program orientation for new students.

68. Initial confusion during the early process probably gets people off to a bad start.

98. New students are generally shy and a little nervous to ask for help, so it would be rewarding if extra effort was made to make them feel that they are not alone.

Improve Counselling Access

65. Provide counselling related to career and program choice prior to enrollment. After the first two semesters many students find that this is not what they really want to do for the rest of their life. (sic)

97. The students are not prepared as to what to expect in the program they are applying in and when the program doesn't meet their expectations, they give up and drop out.

Improve Curriculum Relevancy

13. Update courses to include new technology, new techniques and more specializing program more initial choices beyond progr. oper/anal. also more micro apps. (sic)

42. Open the door for all students to enter a co-op course.

48. Make sure courses offered are relevant and interesting and that content is not un-necessarily repeated in the future.

110. By hiring qualified teachers and reducing the number of professional options to 3 or 4, taking out the Liberal Studies courses which are useless.

Improve Administration

70. Bureaucratic bungling and disregard of students.

78. When they moved to the Don Mills campus, they could put out a questionnaire if students reaction would be & to inform students of what is going on with the college direction. (sic)

Allow for Increased Student Input

5. I would have the students give more input on the changes that they would like to see in the school.

104. Get more feedback from students and apply them.

105. Someone in the college should be there listening to students' concerns and to take actions.

Increase Opportunities for Social Interaction

23. Increase school spirit and therefore social aspects.

59. Provide more recreational facilities.

76. Improve social activities.

Improve Student Motivation/Commitment

33. If people are committed, prepared and certain of themselves, they will succeed.

35. The problem is related to the background of the student. And it is all determined by her belief to be successful.

64. Many students that drop out are just too lazy to do the required work. (sic)

Academic Monitoring

54. Monitor student's academic activity.

Improve Study Habits

7. Provide assistance for time management, note taking....etc.

25. Help students learn time management.

Assist with Housing

76. Improve housing.

Miscellaneous

91. I think that the question listed above is not important at all. Some students start out poor and become excellent students, while the ones who start out excellent become total failure.

95. This course requires a lot of time (home-work) and money (computer, software, supplies, etc.)

APPENDIX X

STAFF AND STUDENT INTERVIEWS

For purposes of gathering perceptions related to the usefulness of the two diagnostic instruments administered in Phase 2 of this research project and the preliminary interventions implemented in Phase 3, individual interviews were conducted as follows:

Staff Interviews

4	Psychology of Learning and Human Relationships (PSY 585) Professors
2	College Counsellors located in the School of Computer Studies
2	2 Administrators - Dean and Chair of Computer Studies
1	First-Year Coordinator

1. What is your opinion of the Noel/Levitz CSI as a diagnostic instrument for early identification and intervention for students at risk of dropping out?

- not an active dynamic test
- too labour intensive; takes too much time in PSY class; could perhaps be used selectively
- some students misidentified
- difficult for students to understand
- feedback to students was good; overall, instrument is good
- ESL is a major problem but was not evaluated by the CSI or LASSI
- instrument appears to be useful if followup occurs
- good starting point; however, culturally biased as it depends on Western culturalization
- good instrument; should be administered prior to enrollment to avoid cutting into class time

2. **What is your opinion of the LASSI as a diagnostic instrument for early identification and intervention for students at risk of dropping out?**

- could be used as a diagnostic tool but only after students have "bought into" study skills seminars
- self-assessment was good; immediate feedback was useful
- attitude scale was useful; sometimes attitude is unrealistic
- if it points in appropriate direction, use it

3. **In your opinion, did the feedback to students as a result of the CSI and/or LASSI result in any positive action on the part of those students?**

- no
- very little; resistance on part of students
- it may have but if so it was not obvious
- gave students insights, awareness building, tangible information
- not aware of any but maybe
- don't know if they did or didn't

4. **Based on your observations, would you consider the use of one or both of these diagnostic instruments in your PSY 585 course to help students succeed at Seneca?**

- LASSI yes; not sure if Noel/Levitz useful - it may be useful prior to enrollment
- no - time spent not worth the benefits; would not participate again
- LASSI more useful because of immediate feedback and relatedness to course
- cost of instruments should be weighed; they are different instruments that measure different things

5. **What is your opinion of the preliminary intervention activities undertaken as part of the ASAP?**

(a) Noel/Levitz student report

- not clear - often students masked real feelings; not too much denial but some in academic motivation section
- limited value
- useful
- awareness of needs increased
- good
- follow up in a personal way is important; interview with student is important
- extremely supportive; both PSY professor and counsellor referenced the Noel/Levitz and LASSI reports as indicators for students of areas of need they might pursue

(b) LASSI student report

- limited value
- good
- useful
- extremely supportive

(c) Description of the LASSI scales and Recommendations for Action

- too complicated; too much detail; too many different words

(c) Schedule of Student Resources

- good idea
- excellent - schedule was the most helpful and should be continued
- students definitely followed up; very useful; several students approach professor as a result of the schedule
- important to have
- yes, good
- very little; about six students were referred to Counselling for career counselling
- good idea
- good - for example, 165 hours of peer tutoring was given

6. **Did any of your PSY 585 students discuss their CSI or LASSI reports directly with you?**

- professor initiated contact with about 80% of students
- no
- some came forward but it was not clear whether it was as a result of the reports
- no but discussions may have been prompted by reports

7. **In your opinion, would a structured student advisement program improve student success within the School of Computer Studies? Comments.**

- trained counsellors should be used rather than faculty; students need to choose
- helps but not often; most helpful with first semester students
- yes, especially in first semester but won't work as an add-on
- yes, helps address individual problems
- yes, use trained counsellors
- SWF time too costly; advisement is an excellent idea; faculty best as advisors
- counsellors may be better experienced as advisors
- excellent - British advisement system works effectively; students are assigned to a faculty member; faculty advisors are better because students know faculty
- yes
- intrusive advisement may be resisted by students

8. **Other Comments?**

- set up a study strategies clinic (similar to Writing and Math Centres) with faculty experts in the area; consider the language and study strategies correlation
- incorporate learning strategies and language for ESL students in PSY 585 course
- provide separate support for study strategies and learning supports similar to Writing and Math Centres
- more group sessions are needed for study skills, career planning; more faculty tutorials (e.g., COBOL), structured learning centres
- assessment of attitude and motivation should be done at same time as English and Math assessment, preferably prior to enrollment
- diagnostic assessment of motivation, attitude, etc. is needed; must be a commitment to use

diagnostic instruments for several semesters; need to be more proactive where counsellors intervene

- diagnosis should be done up front before enrollment
- hire more counsellors and ESL teachers rather than providing diagnostic assessment and formal advisement program
- PSY 585 course is good because of its focus on transition issues and study skills, etc.
- ASAP project was useful as early identification but intervention usefulness was limited
- bring students in early to explain what program is all about; provide information about coop - orientation
- students are underprepared in language and Math; they often don't know what program is about; there is a definite need for diagnostic testing and streaming and orientation to explain how the college operates
- English is the major problem - need for diagnosis and streaming; learning centres are a good idea
- weakness in peer tutoring is that peer tutors may end up doing the work for the student
- the most effective strategy is diagnostic testing and a developmental/supplementary program to assist students right from Day 1; strong direction must be given - admit and advise

Student Focus Group

1. **What is your opinion of the**

(a) LASSI

- there is some doubt as to whether students will answer honestly or as they think they should answer
- factors such as attitude on day of test can influence results

(b) Noel/Levitz CSI

- tests like this have often been done before; doesn't mean a lot

2. **Did you take any action based on the results of the LASSI or Noel/Levitz CSI? If yes, what action did you take?**

   - none of the students reported that they have acted on the results; two reported that they were not in class on the day the reports were discussed and they never received their reports

3. **What is your opinion of the preliminary intervention activities undertaken as part of the ASAP?**

   (a) Noel/Levitz student report

   - generally, students thought the information could be useful but that it was fairly complex to understand

   (b) LASSI student report

   - generally, students found the immediately feedback from this report to be useful

   (c) Description of the LASSI scales and Recommendations for Action

   - too much paper

   (c) Schedule of Student Resources

   - okay but may get lost in the shuffle of paper

4. **Did you discuss your CSI or LASSI reports with your PSY 585 professor? If yes, did you initiate the contact or did the professor?**

   - none of the students reported having discussed their reports

5. **Generally, what is your opinion of an early identification and intervention program using an instrument such as the LASSI or CSI? Do you think it might help students to succeed?**

   - generally, students felt that both academic and attitudinal assessment should be done with counselling on basis of results

6. **In your opinion, would a structured student advisement program improve student success within the School of Computer Studies? Comments.**

   - generally, students thought it was a good idea but recognized that it would be too costly for all students since all faculty would have to be involved

7. **Other Comments?**

   - a major concern of the students present was a perceived contradiction between declared entrance requirements and actual student abilities (ESL); they perceived a need for one or two semesters of development
   - students thought the English diagnostic test was good and that computer terminology should be used in it
   - commitment and motivation were seen as important to success and students agreed with the concept of assessment in this area
   - lack of maturity on part of some students was seen as a problem by some of the older students